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Dissertation

"Duties of the Physician"

"Valedictory with Remarks"

by

Ludson B. Andrews-

A. candidate for the degree of

"Doctor of Medicine"

Yale Medical School Jan 13rd 1863.

1863

Duty of the Physician.

Duty is the circle by which human life is bounded! It is not an absolute immovable limit, but a relative, ever increasing one, growing with man's growth, widening and expanding with his multiplied relations with his fellow men. It is a boundary seldom passed. Conscience, the faithful guide urges us to action in the path of Duty; but Selfishness draws us back to the center, to ourselves. Thus it is man becomes the unsteady, fickle being we often find him, vacillating between the center of self and the boundary circle of duty. Such an one does not truly live. Man's existence has a higher & nobler end than that which points to self. A life of action in the performance of duty is the only one worth living.

We have a debt we owe to others and that not merely to those with whom we are intimately associated, but to the world at large. This debt of Duty (as we may call it) is proportioned to many acquirements, to his positions, to his relations with mankind. No one is taxed more heavily than the Physician. To expand this idea will be our object, and for convenience we will divide the subject into three parts: the Duty of the Physician to himself, to his patient, and to the community.

And first: It is the duty of the Physician to qualify himself for the work of his Profession. To attain this end, Prof' Meigs gives this as the best advice he can offer: "In all your life doing strive first to increase the boundary of your knowledge." Do this and all your efforts be directed not

merely during your student life, but throughout your whole professional career. No Profession requiring a more comprehensive ^{mind} than that of Medicine.

To excel in it demands a greater compass of learning than is necessary in any other. A knowledge of the Sciences of Anatomy, Botany and Chemistry lie at the foundation. Upon this base the superstructure of Medical Science is to be erected.

But we do not stop here, we call upon all Sciences and departments of Knowledge to contribute their part toward the completion of this at once the most necessary and beneficial of all.

A knowledge of Languages, of Mathematics, of Natural History, of Natural Philosophy, of Law, and the possession of some degree of Mechanical skill, together with a good share of what the world

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familiarly calls common sense
an necessary qualification of one who
would occupy a high position in
this Profession. The Physician's knowl-
edge must not only be thus compre-
hensive, but of a thorough, practical,
kind. It is not enough that
he knows the names of bones & muscles,
of the blood vessels and nerves in the
human system; he must under-
stand them in all their relations
and in their different stages of
growth and decay, both in health
and disease.

Again: it is the
Duty of the Physician, so far as
his time and ability will permit,
to explain the secrecy of Medical
Science, to such questions to nature
and record her replies. She
speaks intelligently and by
following her indications: none

need ever. The students of to day
have opportunities of research never
enjoyed by their fathers. Intelligent
legislation and an enlightened
public opinion have removed
many barriers to the cause of invest
igation; so, ^{that} the Medical Student
is no longer looked upon as a
grave-yard robber or in league
with sextup and resurrectionists.

The Microscope has been added
to our means of observation and
is destined to work as great a
revolution in the study of Anatomy,
as the Telescope has done in the
study of Astronomy. Says Holmes
in speaking of this Subject
"We are poised between two material
infinities, the infinitely great and
the infinitely little, and while the
former has been thoroughly explored
we have but reached the inner

border of the second" The Microscope
is to unlock the arcana of little
things in Nature; and may
yet lay open to us the secret of
existence. But while it is the
duty of the Physician to devote
himself to study, thereby expanding
the mind and storing it with
professional knowledge - he is also
to cultivate the heart and improve
the manner. Thus will he be fitted
for the duties he owes his Patients
In the performance of these Duties
lies his greatest labor. a labor de-
manding an assemblage of
virtues and accomplishments. the
possession of which is worthy
the efforts of the highest genius
and the noblest mind.

Among these we name first
"Truthfulness". Lying is the great
temptation to which Physician

are exposed, and to which
through a misconceived idea of
benevolence, they too often yield.
Many apologists are found for
this course. In a recent work
entitled "Current & Counter Current"
the author devotes several pages
to prove the duty of a Physician
under some circumstances, to tell
a falsehood to his patient. His
arguments in a nutshell and
as he states it is. "A Physician's
first duty is to his patient, his
second to himself." Now while we
are willing to acknowledge that
the Physician should do all in his
power to benefit his patient, even
to the sacrifice of his own comfort
and interest and it may be
even of his own life, or deny that
he is called upon to bant all the
good there is in rectitude of conduct
and justice.



to the uncertain chance of saving
a life already despaired of.

Cases are multiplied to prove
that a falsehood told the patient in
regard to the probability of his
recovery, has saved his life; but
these are of no value, numberless
though they be, to prove the right
to deceive, unless it can also be
proven that the truth would have
destroyed the life in question -
This much to those who would
include lying among the duties
of the physician. I will state a few
reasons why he should be truthful.
It is impossible to fix upon any
definite limits to the practice of
deception. The occasional use
of it soon grows into a habit
and he who once adopts it may
by a mistaken judgment of the
necessity of the expedient apply

The same remedy in other & trivial cases. In this way the Practitioner is led to follow a system of Deception with the same regularity that the unthinking, narrow-minded Physician follows his routine of Practice. Again: there is not a more important element of success than perfect confidence of the patient in the truthfulness of his Medical Adviser. The only way to gain and retain this confidence is to act and speak with candor to the sick. Nothing should be permitted which can in the least impair this feeling, for in it lies a great and powerful influence, often more potent than the most carefully written prescription. A deceptive look, a word, a gesture when detected, gives rise to a suspicion in the mind of the patient which

exerts a more hurtful influence than the full statement of the truth when communicated in a proper and cautious manner.

And concealment here is more difficult than you would at first imagine. There are a thousand ways in which the truth may appear.

Your tone, your manners - the actions of attendants - the arrangements of the sick room - the secret conversation overheard - the incalculable word, uttered perhaps by the prattling child - the convictions of the patient himself all tend to thwart your plan - and when the truth breaks upon the mind of the sick, who can tell the depth of despair which overwhelms the soul, his worst fears realized and to a state of hope succeeds a blank despair. It were better to tell the truth, the whole truth

than thus to turn the feelings and abuse the confidence of the helpless
Let us not commit to grab a viv.
May we be truthful to our patients and just to ourselves.

The Physician should be a humane man. The feeling of sympathy should abound in his nature, not that sympathy which consists of an ~~ostentatious~~ ~~display~~ exhibition of feeling, giving utterance to sobs and groans - to noisy protestation and the flow of tears, likening the sick room to an Egyptian Tomb and the attendant to mourners at a funeral - This would subvert the very end for which the Physician is called - No, he wants no such humanity as this - but a sympathy which will provoke to action and arouse to efforts to relieve suffering.



and restore health. His feelings may be strong, but these he must control, and this is the secret of his ability to behold scenes of sorrow and distress which unman and enervate those who are unaccustomed to them. His whole life is spent by the bed-side of the sick and dying.

Death is a frequent visitor, the great enemy with which he must contend and here when life hangs upon the decision of the moment, would you have the Physician hesitate to employ the lancet or the knife, because forsooth he may inflict temporary pain or cause you to shudder at the sights of blood? Would you have him sit down and join his lamentations with those of the weeping friends and thus allow death to claim his victim? Would you have the Doctor show his sympathy for you by such a course?

Complain no longer that Physicians are hard hearted and unfeeling because they perform operations necessary to save life and remove disease with a steady hand and a clear eye. This is the highest proof of their humanity - a humanity shown by that sensibility of heart which makes us feel for the distresses of our fellow men and which of consequence incites us in the most powerful manner to relieve them. Such sympathy naturally engages the affection and confidence of a patient, which is of the utmost importance to his recovery.

The Physician should be a benevolent man. Charity is the eminent virtue of the Medical Profession. Says the celebrated Sam. Johnson. "I believe every man has found in Physicians



great liberality and dignity of sentiment, very prompt effusion of beneficence and willingness to exert a lucrative art. where there is no hope of lucras." Listen to the words of a recent author. "Show me the garret or the cellar which its messengers do not penetrate, tell me of the pestilence which its heroes have not braved in their errands of mercy; name to me the young practitioner who is not ready to be the servant of servants in the cause of humanity, or the old one whose counsel is not ready for him in his perplexities and I will expatiate upon the claims of a virtue which I am content to leave you to learn from those who have gone before you and whose footprints you will find in the path to every haunt of stricken humanity"

Neither will I enlarge upon this duty. It is one the Profession has fully learned and cheerfully practic'd. It is a virtue replete with blessings. It blesses him that giveth and him that receiveth.

A Physician by the nature of his profession has many opportunities of knowing the private character and concerns of the families in which he is employed. He is admitted at all times and without formality to the family circle. A confidence is reposed which even the most intimate friend fails to gain. This gives rise to the sacred obligation of secrecy and honor. No high minded or even well b'd man can be reckon't to such a trust, yet there are those in our profession, who habitually violate this sacred law and amuse themselves by recounting,



the knowledge acquired by the
opportunities of their position. Too
soon a sentence cannot be passed
upon such meanness. Let those
who practice this vice be held up
to the scorn and contempt of all
right thinking persons. Let the
anathemas of society be uttered
against those who prostitute the
garnet of the Medical Profession to
such despicable acts. In keeping
inviolate the secrets of others, the
greatest discretion and most deli-
cate sense of honor are demanded.
A well earned reputation for the
practice of this virtue is one of the
surest passports of success in life.
Its importance challenges your
attention and renders it worthy your
efforts to gain.

The Physician should
be punctual in answering his



professional calls. The want of punctuality in a practitioner is a fault which no amount of practice can excuse. The busiest people are always the most punctual. Do not answer a messenger, "I'll be there directly," when you know another patient in a distant locality is anxiously awaiting your arrival. Disappointment must ensue. You injure your own reputation, while long of tridion waiting may induce a state of fretfulness in your patient, which may aggravate his disease beyond the reach of your remedies. If such a practitioner does not lose ~~cast~~ ~~cast~~ in his profession and practice in the community, it is a wonder that cannot be accounted for. We have thus cursorily mentioned the more important duties which the Physician



owes his patient Amen enumeration
of some few others will conclude
the second part of our subject.

It is incumbent on the Physician
to leave nothing undone which
may aid or comfort the sick. There
are many things which tend to
this end which will suggest them-
selves to every thinking mind.

He should govern his patient
rather by his personal influence
than by harsh or exacting com-
mands. He should make no dis-
tinction on account of wealth or
rank. ^{riches is the} Franklin's contemptible an
ark for any man to practice who
makes pretensions to decency or to
public regard. The Physician
should pay attention to his man-
ner, he should be the Gentleman
the dignity of his profession demands
In short, ... should ^{he act} the man

and support the rightful claims
of his position he will not fail
to benefit the sick and please
the well.

The relation of the Physician to the community is an interesting and important one and one which comes with its great responsibilities. His learning and position enable him to exert an influence for good or for evil not easily estimated. During the period of his career he is brought in contact with all persons and classes of society. None so high or so low, none so virtuous or so vicious as not at some time to need the kind offices of a Physician. A whole generation may be born, live, and die while under his watchful care. In this way the life of the Physician is interwoven into that of the com-

munity in which he practices. He may prove a blessing to it by the example of a virtuous Christian life or leave behind him a memory doubly accursed by the positive harm he has done and neglect to do the good which lay in his power.

The Physician should be the friend and supporter of Morality and Religion. This we might expect from the influence of his pursuits. The very diseases he treats are many of them penalties of the violation of Gods moral law. When ever he goes abroad in Society, he beholds scenes of sorrow and distress in which he can but recognize the hand of God visiting with punishment the sins of fathers upon the third and fourth generations. His life is a continued school —

time and no lesson is taught more plainly or forcibly than that of Morality. In his relation with Society he becomes the teacher, for it is his duty not only to cure disease but to instruct the people in the means to avoid it, and surely he will not now fail to teach the lesson he has so long and constantly learned. By precept and example, in public and in private, he should be the uncompromising enemy of immorality in whatever form he may trace its hideous features. Be it under the glittering robe of fashion or the unsightly cloak of ignorance and vice, he should stamp it with its true name and with the mark of his own disapproval. Then is he true to duty, a safe and faithful teacher.

There are strong reasons why the Physician should be a religious

man, or at least should give Religion his support and influence. He has to care for the human body, the most wonderful piece of mechanism which has issued from the hand of Divinity. Who indeed can survey the external and internal structure of the human system, the wise arrangement of bones, the adaptation of every part to perform its appropriate functions, the curious and admirable mechanism of the eye, the ear, the heart, - the mysterious circulation of the vital fluid, - the lungs, the nerves, the muscles, and all the innumerable wonders of the animal economy and not be deeply impressed with the wisdom and goodness of the Almighty Creator? It is said that Galen one of the fathers of Medicine was converted from Atheism by the

contemplation of the human frame
If he at that distant time, when
surrounded by all the influences of
heathendom looked ~~Nature~~ more
to Nature's God, how much more should
the Physician of to day situated
amid the civilizing influences of
an enlightened, living Christianity
learn to love and obey the Author
of his being and his blessings

But if all these means fail to
make him the personal possessor
of Religion he cannot fail to ap-
priciate its power for good and
his own duty to the community
in regard to its support Other
men may see its influence on
society in the churches it has
erected. in ^{the} benevolent institutions
it has given birth to. in its ability
to overcome evil advance Morality
and improve the condition of man



kind, but the Physician can see its influence over the individual man, in the support it gives in the last trying hour, and in the peace it affords when disease triumphs over Nature and Death claiming the victory. The Physician then as an enlightened educated man must perceive the good Religion has accomplished. As a humane sympathizing man must acknowledge the benefit to the individual and as a moral responsible being must support the cause -

Thus briefly have I treated of the Duties peculiar to our Professions. Hoping the truth so feebly spoken may arrest your attention. I leave the subject for your consideration -

Valedictory Remarks.

Another task and man done.
We are now on the dividing line
between the buried past and the
unborn future. It is a time pro-
mant with thought. The mind ~~recalls~~
with pleasure its existence in the world
of reality and of deeds already done,
but looks with trembling solicitude
to the life beyond when fact gives
way to fancy and deeds performed
to the hope of doing. We have lived
this former life and in we enter
the portals of the second musing
eager, yet hesitating to speak the
word which severs the bond that
has here united us. I should be
reverent to my duty and to the better
feelings of my nature did I fail to
remember with gratitude your our
honored Instructors. A few short months
ago we first assembled here

to receive the benefit of your instruction. We supposed that long lives spent in the practice, and minds devoted to the science of Medicine, combined with great experience in teaching, would eminently qualify you as Instructor. Nor have we been deceived in our judgment. The interest you have manifested in our progress, the efforts made to advance us in our studies, the endeavor to inculcate correct principles, and point out the most approved modes of practice, the kindness you have shown in your intercourse with us all, all will be remembered and will serve to strengthen the kindly feelings which always exists between the faithful teacher and the grateful pupil. To you Sirs in accord the praise of having consecrated.

yourselves to the work of educating
mind and what higher praise
can be rendered to mortals than
that due the true teacher. The blessings
you have conferred, will return to
bless you by the consciousness
of beneficence and that gratifi-
cation you may feel in after
years of having contributed to
the success and usefulness of those
who have been under your instruc-
tion. Long may you enjoy the
proud satisfaction of seeing the
bush you have mulcated yielding
a rich harvest of noble thoughts
and generous deeds, and may
many a band of youth come
before you as we now do to utter
their benedictions as from grate-
ful hearts they bid you Farewell

My Classmates -

The Period to which
we looked forward with so much
of interest and anxiety has arrived.
Our life as students of this Institu-
tion is closed - Our association
together has been as pleasant as
it has been brief so that to day
we have no jealousies to forget,
nor animosities to bury before
we can separate as friends. A
unity of purpose has begotten
a unity of feeling. As a class
we leave behind us a reputation
for studiousness and correct
 deportment as the best and only
Legacy we can bequeath to
our successors. But while we
entertain a just pride in view
of our past course - may this success
be but the harbinger of a bright
and useful future -

With the honor and privileges
conferred by our deys, the im-
mediate guardianship of our
Irrua Mater ceases. No longer
can we rely on your counsel and
advice upon those who have so
kindly led us on in our pupillage.
We go forth each to think and
act for himself. We are to assume
responsibilities from which no one
can relieve us. Self reliance and
a thorough knowledge of our duties
must constitute our strength. To
develop these elements of power will
require long years of bitter expe-
rience and diligent study - and
during this time we are to toil on
never ceasing ever waiting. A life
of constant rigorous effort is then
to be our lot. which though dif-
ficult and often gloomy - will
not be entirely devoid of pleasures.

The triumphs of his Art afford
to the Physicians enjoyments
as pure as the blessings it confer
on others. But we will no longer
anticipate the realities which await
us - but as soldiers armed for
action and determined on victory
let us go forward to meet them
thus prepared and in such a
spirit you need not look for
failure - a perfect and final
success will be yours.

Farnell

Dysentery or Colitis.

The essential feature of this disease, is an inflammation of the mucous membrane, of the large intestines; but it does not always extend over the whole length of that long surface, it being confined in simple forms of dysentery to the rectum.

For convenience of description, and treatment, I shall divide it into three grades or varieties; the acute, the subacute, and chronic. The acute form of dysentery is commonly ushered in with fever, there being more or less lassitude, loss of appetite, accompanied with pain in the abdomen, which is of a dull or transient character. We also have costiveness, and diarrhea, together with other signs of irritation of the intestines. The local symptoms, in mild cases of dysentery may however make their appearance without any

premonitory symptoms of a febrile character, and the disease may thus run its course, the febrile symptoms in such cases being entirely absent. The patient may be attack with symptoms of fever, at the same time that he experiences pain and tenesmus. The fever often runs for a considerable length of time without any manifestations of disease of the bowels, though this does not often happen I believe, unless it is associated with some other disease of a febrile character.

The symptoms of this form of dysentery are, a severe griping pain, a desire so frequently go to stool, at the same time there is distressing tenesmus; the tenesmus is much greater when the inflammation is confined to the rectum.

These symptoms all occur usually, within a few hours after the first

indications of the disease.

But with all this torments, and tempests, nothing is evacuated but mucus, or mucus mixed with blood; unless the bowels are previously loaded, when there will be frequent matter passed with the first two or other discharges, which will generally afford some temporary relief to the patient.

After this the discharges will be more or less bloody, the blood is sometimes discharged in alarming quantities. The patient during this time is constantly purged, he is able to get no rest either by night, or by day; he desires to go to stool, and feels satisfied that he can then find relief by discharging something that is constantly irritating him, and causing him the most intense

agony; but this he soon finds gives him no relief. the griping and distress, still continues unmitigated. In this acute form the urine is high colored, and scanty, the bladder and rectum sympathize with the rectum, consequently the patient finds much difficulty in passing it. In females the vagina it is said, is sometimes implicated in the same way. There is commonly tenderness of the abdomen on pressure, and the extent of the inflammation can usually be determined, by ascertaining in what locality the tenderness exists. In this stage of the disease, except in mild cases the pulse is accelerated, being full, and strong, the skin is warm, and dry, the tongue moist, and covered with a whitish film;

the secretion of bile is commonly diminished. Sometimes in very severe cases, the patient sinks from the impression made on the nervous system. The patient in such cases complains of a hollow, sinking feeling in the abdomen, the skin is cold and damp, the pulse feeble, and the face mucus, and vomiting.

Most commonly we see manifest signs of improvement between the sixth and tenth day, and the patient recovers.

Sometimes however, the disease is so severe that the symptoms of depression appear from the beginning, and the nervous system is unable to react from the great severity of the disease.

In such cases the patient has a feeble, quick pulse, a pale, cool and clammy skin, which causes

on slowly, in the most fatal cases; an anxious countenance, and a purplish hue under the eyes, about the lips, and at the roots of the nails; at the same time the local symptoms are aggravated.

These cases commonly terminate fatally. This severe form of the disease, seldom appears, excepting as an epidemic. If the case is about to end favorably, we see signs of improvement as soon as the seventh or tenth day; but should the severity of the symptoms not abate by that time, they are soon apt to be aggravated; the febrile symptoms, together with all the peculiar symptoms of dysentry are alarmingly increased, and it becomes evident to the intelligent medical attendant, that death is rapidly approaching.

If this severe form of the disease is not checked, during the early part of its course, there is great danger of disorganization of some of the internal, abdominal organs.

From the effects of inflammation.

The liver is liable to suppuration; abscesses may form in it, which can usually be determined by the rigors, and chills which alternate with the hectic symptoms. When the liver is thus affected, it is probably owing to the influence of heat, which impairs its functions; this of course most commonly occurs in tropical climates. When the patient experiences sudden relief, and the pulse flag, becoming weak and irregular, the countenance sinks, and the extremities and forehead are covered with a cold, clammy



sweat, we may suspect mortification. This disease may result in ulceration of the intestines; when this is the case, the more violent symptoms may subside, but the symptoms of dysentery sometimes continue in a chronic form, which are very difficult to treat.

The sub-acute variety of dysentery differs from the acute, in that the symptoms are not as marked, and severe. The febrile symptoms are sometimes so mild as to pass entirely unnoticed, though there are always found some symptoms of this kind if the patient is closely examined. The circulation will be disturbed, the functions of the skin will be found to be impaired. Towards evening there will be a feverish state of the system, and the local symptoms

will be aggravated. The stools in this form of dysentery will not be as frequent as in the acute form, nor the discharges of blood as profuse; the griping and tenesmus is not as severe, and there is very little, if any, tenesmus of the abdomen or rectum. The natural feces are retained in both of these forms of dysentery, especially when purgatives are exhibited, when they are brought away mixed with blood and mucus. Chorœli dysentery is commonly a sequel of acute, or sub-acute dysentery, but it frequently appears spontaneously, without any of the acute symptoms preceding it, from derangement of the functions of the liver. In this form of the disease the contents of the bowels are more readily passed, than in

the other varieties, it being discharged in a liquid state, or accompanied with mucus; but they do not possess the odor of healthy feces; the stools are always preceded by an uneasy sensation, and a rumbling noise in the bowels, they are passed with some gripping pain, and followed by tenesmus.

After this the patient is usually quiet for a time, and is not troubled with any of the uneasy sensations until the next evacuation. There is with these symptoms an unhealthy aspect of the countenance. The appetite may be good, but the digestion is very imperfect, which is evident by all the signs of disordered digestion; undigested food will be passed from the bowels. If the liver is enlarged, it can easily be detected by the appearance of the stools, and urine; the bile being absent in the excrement, and present in the urine.

If there is ulceration or organic change in any part of the intestines, or the liver is in any way affected, the griping, pain and tenesmus will be greatly aggravated. We commonly find these very obstinate cases, sometimes defying all means of treatment.

Dysentery is very frequently associated with other diseases, it being prevalent in insular districts, consequently it often accompanies intermittent, and remittent fever. It is also frequently complicated with typhoid fever, and is then a very bad symptom. We often find it associated with gastritis, enteritis, and enteric fever.

Prognosis.

When dysentery is about to terminate favorably, the pains do not occur so frequent, and they are less severe, the tenesmus abates, the discharges are more abundant and less frequent;

but they may at this time, be focal
and bilious, and the disease may thus
terminate in a mild form of diarrhea.
But when the vermous and ulcersus
suddenly subsides, and tympanitis,
coldness of the extremities, a cool clammy
skin, feeble, frequent, and irreg. pulse
pulse, involuntary discharges, delirium
and stupor supervene, we may expect a
fatal termination. Death may take place
from exhaustion, gangrene, and from
the wearing effect of the inflamma-
tion, and the discharges. The longer
the disease continues without removal
of course the greater the danger.
If we find much ulcerous or pressure
along a considerable portion of the tract
of the intestine, combined with other bad
symptoms, our prognosis is unfavorable.
Ordinarily, dysentery of a sporadic type
occurring in temperate climates, does not
prove a fatal disease; but when

prevailing as an epidemic, in non healthy
immature districts, in hot climates, in
armies, and in crowded and uncleanly
parts of large cities it is a disease much
to be feared.

Pathological Anatomy.

In cases of death from dysentery, the
rectum and lower portion of the colon
always presents signs of inflammation.
Sometimes the inflammation is diffused
over the whole of the mucous membrane
especially; it may be seated in the glands,
and mucous follicles. The membrane is
often found red dened, thickened, and
ulcerated. Very little lymph is fre-
quently covering the membrane. Some-
times the inflammation extends beyond
the mucous membrane of the intestine,
involving the whole of the parietes of
the bowel but the peritoneal coat;
it is said that perforation of that
coat is exceedingly rare in dysentery;

The inflammation sometimes extends through the entire length of the colon, and into the small intestines.

Dysentery occurring in tropical climates, is very apt to affect the liver.

Causes.

The predisposing cause of dysentery is heat-long continued; it-increases the excitability of the mucous membrane, of the alimentary canal, and disorders the functions of the liver, and by relaxing the surface of the body, renders it-peculiarly susceptible to the influence of cold; which together with moisture is one of the most-common exciting causes; it-is probably owing to this cause, that dysentery is so prevalent-a disease among armies. Irritating substances in the bowels, often act-as exciting causes; such as unripe fruit, or ripe fruit-in large quantities, eaten irregularly, unwholesome, and indigestible food, imperfectly

fermented alkoholic drinks, putrid water, worms, and fecal accumulations in the bowels, putrefying animal substances, and decaying vegetable matter all act as exciting causes. Dysentery appears frequently as an epidemic, particularly in unhygienic districts, accompanying intermittent, and remittent fever, also typhus fever. It is the prevailing opinion among the profession at the present time that dysentery is not contagious, that is, in its ordinary form, but as there has been much dispute on that point, I shall not attempt to argue it pro, or con, but leave it to those whose delight it is to speculate and theorize.

Dysentery attacks persons of all ages, sex, and classes; those who are most exposed, being the most liable to suffer from it; it is much more prevalent in summer and autumn, than in winter or spring.

Treatment.

We must vary the treatment of dysentery according to the circumstances of the case with we have in hand.

We must regard the previous derangements of the patient, and also the manner in which the disease has made its attack. We should arrive as near as we can at the character of the disease, considering whether it be epidemic or not. If diarrhoea has preceded the attack of dysentery, we should generally at the earliest give a cathartic; calomel will usually prove the best cathartic in such cases, particularly if we have symptoms of bilious derangement. Sporadic dysentery can often be destroyed by administering full doses of calomel in the first stages of the disease. The objects which we should have in view in the exhibition of cathartics are, to remove all irritating substances from

the bowels, and to change the state of the secretions. The character of the excretions should here be taken into account. Drastic purges can never be used with impunity, they only add to the disease by irritating the already inflamed surface; laxatives, and the milder purgatives should be used instead. We should commonly evacuate the bowels well at first, then we may follow this with laxatives in small doses, if there are indications that they are needed, such as fecal matter in the intestines. We should however avoid teasing the bowels with repeated small doses of laxatives or purgatives. On ordinary cases, from fifteen to twenty grains of calomel should be given at first, which should be followed in four or six hours with some laxative, such as castor oil, or some of the neutral salts, as sulphate of magnesia, or sulphate of soda; there may be

used with much advantage when we have
fever, with a hot-and-dry skin; they
increase the secretions, and produce an
alterative effect. If the strength fails,
and the disease takes on a chronic form
rheubarb, in some of its forms may be
given, and usually with very good
effect. Great benefit may be obtained
by combining opium, with our cultiva-
-tives. Opium is one of our most-impor-
-tant-remedies in the treatment of dys-
-entery; it relieves the patient from
pain, produces sleep, and allays spas-
-modic action, thereby facilitating the
action of other medicines. When opium
is combined with ipecac, it directs the
action to the surface of the body. The
dose of opium must be varied accord-
-ing to the condition of the patient,
and the amount of pain present.
we should aim to keep the patient
under its influence; if the disease is

action, and the pain is severe. Opium may be given with benefit in the form of an emulsion, in the proportion of one drachmful of Laudanum, to two drachmspoonfull of starch. Diaphoretics are very useful remedies, they act by direct- ing the circulation to the surface, at the same time they have a depleting influence on the blood vessels, thus tending to allay inflammation. Small doses of Tarr^m emetic, or half a grain of siccac, with a quarter or half a grain of Opium given every two or three hours, will frequently have a very good effect. Spirits of wine is a most excellent diaphoretic in dysentery. The warm bath may often be resorted to with benefit. Bleeding. The indica- tions for bleeding are a full and strong pulse, pain, and tenderness of the ab- domen, accompanied with a general fetid action; These symptoms being present-

in a person of a full plethoraic habit, we would commonly bleed, usually one bleeding will be sufficient, but if the strong febrile symptoms continue unabated, we may repeat the bleeding. But if the disease has run on for a considerable length of time, and the patient in consequence is much reduced, we should not bleed.

Counter irritation is often employed with advantage, when we have over- come the force of the disease. Much relief will often be obtained by the application of warm fomentations to the abdomen. Soothes applied about the anus, are particularly useful in cases where we have severe tenesmus. Acids are much used; the nitro muriatic acid is often used in the active and stages of dysentery.

Diet-

In cases not attended with much fever,

some solid ~~food~~ farinaceous substance,
such as boiled rice, cracker &c. may be
given; but if we have much fever
present, the diet should consist
chiefly of small aqueous drinks, gruel
broth &c. We should however consult
the patient's cravings, and longings,
and endeavor to appease them so far
as it is expedient with the patients
welfare. In the treatment of sub-acute
and chronic dysentery, particular at-
tention should be paid to the diet.
Bleeding is seldom made use of. Castor-
oils are not often required; laxatives
however are of much service, to prevent
the accumulation of fecal matter in
the intestines; for this purpose, castor
oil, rhubarb, or some other especially
mild laxative may be used. Opium
should be given if we have pain;
the Dose is powder given at bed time.
will often act very favorably. Aperients

medicines are much used. A change
of air will often effect a cure, when all
other means have failed.

Albert-Gordon. Browning.

Peritonitis.

By

Henry Sylvester Cornwell

of

New-London,

Conn.,

Candidate for the Degree of Doctor of Medicine.

Peritonitis.

This is the term applied to an inflammatory affection of the serous membrane lining the abdominal and pelvic cavities, which invests, more or less completely, the several viscera contained therein. The great extent of the Peritoneum, the different functions of the organs which it implicates, as well as the obscure, insidious, and dangerous character of some forms of the affection, render it one of the most important studies to which the Student of Medicine can direct his attention. This disease may appear at any period of life, and may be either acute, or chronic. I shall confine myself, however, to a consideration of the affection as it appears in the adult, independently of the puerperal condition.

Symptoms and Course of Acute Peritonitis.

The Disease commences with pains of the abdomen, rigors, more or less local heat, and the general symptoms of febrile attack. The pain may commence in any part of the abdomen, from thence gradually spreading over its entire surface, or it may be generally diffused from the beginning.

The pain is, in fact, the most prominent symptom. The patient suffers from whatever brings the abdominal muscles into action, and on this account voluntarily impedes the descent of the diaphragm in respiration. He dreads the touch of the physician, pressure, either by the hand, or the bed covers being almost intolerable. The decubitus is consequently dorsal, with the legs flexed upon the body, both to elevate the bed clothes, and to allow the intestines to fall away from the inflamed area.

The pain is of an acute, jagged, and tensive character, aggravated by peristaltic

action, and amounting, frequently, to positive agony. The severity of the disease is estimated by the degree of intolerance of pressure. We discover this, not alone by the exclamations of the patient, but by the facial expression peculiar to this affection. The nose appears unusually pointed, the forehead corrugated, and the whole countenance indicative of dolorousness and anxiety. Not unfrequently, the face is of a leaden hue, attributable to imperfect excretion of the blood. There is also tumefaction of the abdomen, at first tympanitic in character, but subsequently due to the effusions of serum into the peritoneal cavity. There is, however, considerable diversity in these manifestations, dependent on the condition of the muscular fiber. In those whose abdomens have, from any cause, been recently distended, from ~~any~~ there is, of course, reader and more rapid distension. The urine is

commonly scanty and dark, the pulse frequent and soft, the skin hot and dry, the respiration quiet, and laborious, and the bowels constipated from impaction of their mucular coats. Generally, on the second day of the disease, the pulse grows tense and cedred, and rises to 120 or 130 in the minute. The tongue becomes covered by a whitish or cream-colored mucus, and the thirst is urgent and distressing. The advance of Peritonitis is rapid, when acute, and unless combatted by vigorous treatment its march becomes one of triumph and terminates in death from exhaustion of the vital energies. This may occur in from 16. to 24 hours, but the average duration is about a week, though it is sometimes prolonged to the 30th or 40th day. A small, weak, and quick pulse, a sudden suspension of the pain, a hollow and ghastly countenance, coldness of the extremities, and some times, ^{coma or convulsions,} announce the impending dissolution.

Such, in brief, is the assemblage of phenomena attending the majority of well marked cases when running to a fatal issue. In more favorable instances, however, several of these symptoms may be absent, or the whole of them less marked, when the amelioration is rapid and Convalescence established in a few days. After the danger is averted, a tumor, answering to the form of the intestines, may sometimes be felt for some time. Peritonitis may terminate like other inflammations, in Resolution, effusion, gangrene, or by becoming chronic. The character of the effused fluid is various. Thus it is sometimes serous with or without some commingling of bloody matter, or it may be puriform, or albuminous, or all of these combined. When pus & lymph are effused, it is doubtful whether they are ever absorbed, and such cases usually terminate fatally, or pass into the chronic form. When the effusion is fairly begun, the abdomen is dull on percussion,

the patient shivers, there is pallor of the countenance, and frequently, coldness of the extremities and a sudden suspension of the pain. Termination by Gangrene, though of occasional occurrence, is one of extreme rarity.

Chronic Peritonitis. The approach of this disease is insidious and almost imperceptible, which characteristics may be maintained until a short period before death. The pain is at first slight, except on considerable pressure, or pressure made in some particular direction. The pain is dull, obscure, and deep-seated, rather than acute, and, in many cases, the patient complains only of a feeling of oppression, weight, and weariness of the abdomen, which is at the same time hot and dry, particularly at night. The abdomen may be either enlarged, or unnaturally flat. The bowels may be either constipated, or there may be alternations of this condition with diarrhea. The evacuations are clay-colored, and often mingled with portions

of undigested food. Very often there is infiltration of the skin as in the Acute Variety, but the integuments sit loosely upon the peritoneum which is felt beneath as a loose bandage binding down the intestines. Towards the close of the disease the diarrhoea becomes more constant and the dejections peculiarly offensive. The pulse in the morning is nearly natural, but towards evening it grows more frequent. At this time also there is more difficulty in breathing, with hectic flushes of the face and nocturnal perspiration. Chronic Peritonitis, when occurring in those of a scrofulous and debilitated habit, is frequently accompanied by mesenteric engorgements and tuberculous formations within the abdomen. These may be regarded as local manifestations of a general diathesis. We may suspect this condition when the disease cannot be referred to previous acute disease or to affections of the viscera. While the

existing cause may be irritating contact of the tuberculous germs with the inflam-
membrane, it is easy to see that this con-
dition may be perpetuated and aggravated by subsequent delamination to the vicinity
of those cachectic elements which had be-
fore been latent. In such cases the disease
may stial on for some time, committing
the most extensive ravages, with an en-
tire absence of criteria by which we may
judge of its existence. In the advanced
stages the abdomen feels lumpy or doughy
with fluctuation, generally localized by ad-
hesions. The motions are slimy and offensive,
the pulse habitually frequent and the ~~fever~~
either furred and red, or glazed and dry. The
diarrhea is constant; impaired nutrition is
shown by the gradually progressing emaci-
tion, and the disease hastens to a fatal
termination. Tuberculous Peritonitis occurs most
commonly in the young, and is not usually
attended by any considerable effusion.

Diagnosis. Peritonitis was formerly thought to be distinguished by the pulse being slow in the minute, by the permanence of the pain, and by its producing no inclination to go to stool. But modern experience fails to confirm this opinion, the disease when partial or chronic being scarcely distinguishable from inflammations of the viscera enveloped by the membrane, particularly when occurring simultaneously with those affections. Still the nausea, the character of the pain, the peculiarity of the pulse and the history of the case furnish indications of value to the medical judgement. Enteritis is the disease most commonly confounded with peritoneal inflammation. Here, the most valuable diagnostic sign is the tolerance or intolerance of pressure. If this be attended with no considerable aggravation of the pain, still more, if the latter is mitigated by the operation, the disease is probably enteric. The pain of pure

Peritonitis is apt to be more superficial, there is greater disposition to lie in one position, and constipation is less likely to be present than in the former disease. Abdominal muscular spasm may be mistaken for Peritonitis on account of the pain on pressure. It is however a disease of rare occurrence, and is unattended by nausea and vomiting. The diagnosis between inflammation of a viscous and its peritoneal investment is difficult, and, I may add, valueless when determined, since the treatment of both affections is identical. Peritonitis may be simulated by Hysteria, but in the latter disease the urine is pale and copious rather than scanty and red, the pulse is more natural, and uterine disturbance is frequently present as indicated by concomitant symptoms, the correction of which is marked by such an amelioration as to leave no doubt of the Hysterical or Neuralgic character of the disorder. Assistance is also furnished in the various forms of peritonitis by auscultation, especially when the

disease is synchronous with others which simulate it. When the natural secretion of the membrane is imperfect or suspended, or when it is replaced by morbid fluids or concrete exudations, the peculiar and characteristic friction sound may be heard when the walls of the abdomen are made to move upon one of the solid viscera by the hand, by a deep inspiration, or by a change in position. (Wood.) This impression may also be perceived by the touch when the hand is laid on the inflamed part at certain periods of the affection.

Causes.

The causes of this disease are those of ordinary inflammation, as wounds, operations involving the membrane, chemical injections into cavities, to which may be added, according to Bronssais, an epidemic constitution of the air, as well as metastasis from other organs. The discrepancy of opinion which pervades the literature of the dis-

case would be greatly obviated by considering it in many cases, as purely Rheumatic, since it is not unreasonable to suppose those diseases described by Wood and others as rheumatism of the abdominal viscera to be nothing different from rheumatism of their serous tunics. Peritonitis may also result from Enteritis, the morbid condition being transferred from the mucous to the serous coats of the intestines, with subsequent agglutinations of the peritoneal inflexions, or perforations which allow the feces to escape into the cavity of the membrane. Another cause is the retrocession of cutaneous eruptions - It commonly assumes, in these instances, the phlegmonous type, marked by an extreme severity of the symptoms, an early and rapid decline of the vital energies, and a general fatality of termination. In some instances Ergsipelas has primarily attacked the throat, and afterwards has travelled downward and transmitted a phlegmonous inflammation to the Peritoneum.

Prognosis. This is dependent to a great extent on the promptness of treatment, the form of the case, the extent of the inflammation and the previous condition of the patient. If he be young and vigorous, and if the disease be of the acute variety there is a reasonable hope of recovery. On the other hand advanced age, bad air, poverty and grossness of habit lend gravity to the case, and render relapses when they occur, more commonly fatal. The prognosis will also be influenced by the absence or presence of complications, these often constituting the principal difficulty of the case, modifying the course of the disease or prolonging it till the system is exhausted. A continuance of Thoracic respiration, an increasing tumefaction and tenderness of the abdomen, excessive vomiting and undiminished thirst, a weak and fluttering pulse and a Hippocratic countenance are all discouraging circumstances, and indicate a probably fatal termination of the disease -

When the affection is of the chronic or Tu-
berculous variety we can entertain but feeble
hopes of its removal. Though Life may be
indefinitely prolonged, the disorganization is
apt to become more and more extensive
until its fatal period

Pathological Anatomy.

The morbid appearances presented by the periton-
eum as a result of previous inflammation are
varied by the type and duration of the disease.
When this has been of a Themic grade, in a
patient of robust constitution, the membrane
is not only dull from a loss or diminution of
its proper lubricating fluid, but rough and
thickened by depositions on its surface of an
albuminous substance, mingled with bloody or
puriform matters. This deposit at a later period
becomes organized by prolongations into it of
the subjacent capillaries, by which the con-
tinuous surfaces of the membrane are agglutin-
ated together. Where the parts are more move-
ble, the viscid exudation is drawn out into

stringy connecting filaments. This substance, which is of a light amber or greyish color, is known as coagulable lymph. The adhesive process may commence as early as twenty four hours after the commencement of the exudation, and increases as the latter becomes more abundant. The organization begins in numerous vascular points or patches, which become arborescent and coalesce as the disease advances. The morbid structure when once organized becomes denser, thinner, less turgid, and more analogous to serous membrane. The peritoneum, on the other hand, within the areas of the morbid attachments loses its true character and becomes more cellular. These appearances are presented by that portion of the membrane which lines the abdominal walls as well as that which forms the intestinal tunic. When the disease has been of a phlegmonous or asthenic character, these appearances are uncommon. In these cases the exudation instead of being thick, viscid, and tenacious, is likely to be a turbid serum.

The peritoneum is also softer, sodden, more easily torn, and less ready to participate in morbid structures. Where the disease has been chronic, the omentum appears thick and flesh-like, and is sometimes covered by vesicles of a considerable size, containing a serous fluid. The subserous cellular tissue is frequently the seat of minute bodies of a tuberculous character, enclosed in a cellular envelope, and appear to be less the result of inflammation than of a strumous habit of the general system. Bodies of a similar appearance but of a different nature are also found upon the peritoneum. The fluid effused in chronic ^{Peritonitis} is usually whey-like, or milky, and of a sickening odor. The intestines are contracted by adhesions and the valvulae conniventes brought close to each other. Besides this, ulcerations of a probably tuberculous origin sometimes form unnatural foramina between different portions of the intestinal tube as the ileum and colon, allowing during life of the exceedingly rapid transit of food or



process; in either direction, through the body. This process is commonly preceded by a complete blocking up of the membranous inflexions, with semi-solid masses of concrete and partially organized lymph, and the formation of ligaments which crowd the intestines upon each other, creating sometimes invagination, attended by all the symptoms of strangulated hernia. Cartilaginous infiltration in the membranes has also been noticed, though not certainly due to inflammation.

Treatment.

The treatment of Acute Peritonitis includes all those measures employed to reduce general and local inflammation. In the early stage, when the pain is agonizing and the vital powers active, venesection should be practiced in a manner calculated to produce a prompt impression on the system. Twenty-five or thirty ounces of blood may be abstracted, and if relief be not apparent the operation ought to be repeated in the

course of eight or ten hours to an extent according to the emergency of the case. The pulse here is not to be strictly regarded, and appearances of debility being ~~uniformly~~^{frequently} incident to this disease should not intimidate the practitioner from this grand remedy. This should be followed by calomel and opium. The opinion of the Profession is unanimous concerning the propriety of these two remedies. Ten or fifteen grains of the former, and two or three of the latter will prolong the sedative effect of the bloodletting, calm the circulation, and tend to overcome the morbid action. The local should follow general bleeding, and for this purpose leeches should be applied to the abdomen in numbers proportionate to the emergency. This is a measure never to be omitted as the capillaries of the part remain gorged after abstraction from the arm. Crystallic action should also be suspended, and in no way can this be done so effectively as by the administration of opium, in appropriate

doses every three or four hours. Fomentations by a few folds of flannel wrung out in warm water or some weak narcotic infusion and sedulously applied, will also be of service in soothing the pain and promoting cutaneous exhalation. When the system is under the influence of opium the bowels if necessary may be moved by gentle aperients of the stomach will bear them, or by enemata of olive oil, turpentine or starch. The stronger cathartics as well as the turpentine stupes advised by some authors are to be avoided as likely to provoke too much peristaltic action and consequently to increase the sensibility of the membrane. The establishment of fistulism is generally favorable, though many cases proceed to resolution without it. Where some tenderness remains after the above treatment has been acted upon, considerable advantage may be effected from blisters applied to the abdomen and a free discharge kept up by dressing the blistered surface by mercurial ointment. The Veratrum

Uricle which has proved so valuable a remedy in Pleurisy would undoubtedly be of service in Peritonitis also, were it not from the gastric irritability so often present in the latter disease. There is another article, however, as yet but little known to the Profession which appears to me particularly adapted to this emergency.

This is the Gelsemium Semperfivens or yellow Jessamine. That the Gelsemium is vastly superior to the Veratrum in every form of febrile and inflammatory disease, says a recent writer, no one can doubt who has employed the two remedies to any extent. It allays the febrile symptoms, quiet's nervous excitement and sensibility, reduces the pulse and promotes the secretions. Digitalis has also been recommended as a useful article after the disease has been in a great degree subdued, and the pulse still remains sharp and irritable. Platulent distension may continue for some time after the severer symptoms have been relieved. This is probably owing

to a want of Contractile power in the intestines, and may be treated by injections of the infusion of Cinchona or beef tea. Where the disease is more asthenic in its tendencies it must be combated by Stimulants. For this purpose quinine or ammonia may be combined with the calomel and opium. While the disease is active the food should be light and farinaceous, and the drinks acidulous. The wearing of flannel next the skin and the avoidance of exciting causes should be enjoined during and after convalescence.

It is embarrassing to say what should be done when Peritonitis has become Chronic. Whatever the nature of the treatment may be, it is likely to prove of little avail. The most the physician can do, commonly speaking, is to direct his attention to the general health of his patient, to alleviate symptoms as they arise, to resist the process of disorganization, and to postpone, as well as he is able, the advance of the fatal issue.

For this purpose the measures employed in the acute affection are to be modified and adapted according to the cause and complications of the disease. Where this is dependent on the rheumatic or scrofulous diathesis the alteratives may be employed with more or less benefit, as the iodide of potassium with opium and Sarsaparilla given in small doses, and continued for a long period of time. In severer and more advanced cases, we may resort to the iodide of mercury with a view of arresting the formation of adhesions, or of favoring their removal by absorption an event which sometimes, though rarely, takes place. As the condition essential to the production of these structures is one of exhaustion of the vital powers and depression of the assimilating and circulating organs, we may hope for a degree of success from time. In anæmic cases, without much ~~slight~~ irritability, some of the preparations of iron may be administered. The official Compound of this metal with

iodine will be suited to some cases, while in others some of the vegetable tonics will be better borne. A venous condition of the blood will be benefitted by the chlorate of potash with Sarsaparilla. Light wines and malt-beverages may be prudently allowed. When the disease is associated with Hepatitis, dark mineral injections over the region of the liver or paintings of Lugol's solution should be tried in conjunction with other means. When accompanied by excessive discharges our reliance will be upon Opium and the analæst appropriate for Diarrhea and Dysentry. Occasional leechings should be practiced through the course of the disease according to the urgency of the pain and tenderness, and attention should be paid to the state of the bowels to prevent fecal accumulations. When the effusion is considerable we may endeavor to promote its removal by Diuretics. In this case Calomel in combination with Squills and Digitalis, or the

Trailing Arbutus in the form of an infusion may be tried as an internal remedy; or the diuretic tinctures may be applied endermically, as advised by Broussais, especially if there be much irritability of the stomach.

Although active purgatives are commonly prohibited in this disease, Dr Eberle states that in some cases he has seen decided benefit result from the following mixture:-

R Potass. Bitart. $\frac{3}{4}$ fl.
Pulv. Scill. $\frac{3}{4}$
Pulv. Sulphat. Potass. $\frac{3}{4}$
Tart. Antimonii $\frac{gr. ii}{gr. ii}$
Ac. ft Solutio. Take $\frac{3}{4}$ fl three or four times daily.

Dr. Charles Hooker of this Institution, who has had no inconsiderable experience with the chloride of gold, regards this agent as one of our best remedies in this affection. He is in the habit of administering it in the form of pills containing one twelfth of a grain each. The chloride appears to operate as a general allervative, and locally as a stimulant to the secretions and absorbents of the membrane,

and thus to preserve or restore its functional equilibrium. By some of these means continued for a long period of time, improvement can sometimes be made in the affection, and a recovery gradually effected.

Quinine and its Substitutes.

So great is the uniformity of opinion in regard to the efficiency of quinine as a prophylactic and cure for the treatment of malaria, fewer short few attempts would be made to associate any remedy as a substitute were it not that the large and constantly increasing demand for it Alloid has not only so enhanced its value that many, and they the most needy, can not obtain it. But contrary to the general law of demand and supply has threatened also to destroy its production.

The bark from which it is obtained grows in South America. The region where the cinchona tree bounds is an extensive one stretching along the eastern slope of the Andes from 1° to 15° to 11° north latitude. The cinchona calisaya, royal

yellow bark is found however only in the forests of Bolivia and Caravaya in Peru.

It would seem as though a region of so great extent as this could furnish an almost infinite supply; yet from the testimony of many travellers who have explored it within the few years past we have good reason to believe that the cinchona trees are rapidly disappearing and that unless immediate measures are taken to avoid the evil, quinine must cease so long to be used as a remedial agent from want of supply.

Previous to 1857 all of the best quinine exported from South America was gathered in the Province of Pungas. The forests of that district having been nearly stripped of the tree the bark gatherers turned their attention to those of Chaves.

These we are informed are likewise fast disappearing. There is no protection for the timber. Every one can gather it when and where he will there being no restriction save that if you sell your all bark gathered in Bolivia must be sold to a company having the monopoly of the trade. The result will

gathering the bark & directly calculate its destroy
its growth. The natives instead of taking off the
bark in strips as we commercial Yankees do tho
slipperily stem and leaving sticks on the tree so that
it can cover itself again either fell the tree or burn
it entirely.

To prevent the rapid destruction of this bark so
a decree was issued in 1837 also in 1850 forbidding the
cutting of the bark for the period of three years. This
however could avail nothing for it takes infinite time
for the tree to grow to its common size

D. Reddel says of Bolivia, "now, however, we
met with them (the cinchona) every where in the vicinity
of villages now I find a tree of a few decimeters in
diameter it is necessary to make a journey of
several days through wild thickets of the forests."

Mr. Hartman seems to expect to go up
into the forests of Ecuador to search with
an old tree though young plants and roots
abundant. Mr. J. Rice says that in the
cinchona forest of Ecuador there does not

remain a single plant long enough
to produce seeds. The beetle of *Chionanthus*
is said to be the habit of feeding
on young branches and scattering them
on the ground as if marking them
for a new nest, probably the place of
the old.

It was formerly commonly believed
that the males did not consider the
female but a breeding agent.

It is used so extensively now,
that the bush gather goes to ground
of timber back for no more of the
gumine.

The amount of machina used
annually is enormous. The English
Government alone spends £7,000 a
year for the additional use of the
India service. According to one
of his estimates which he considers
very low, "those who swallow gumine

Throughout the world are sufficient
to consume ten thousand quintals
one million pounds of cocaine.
Such revenue, the result of the
tax for several years past in 1854
occurred as much as four hundred
quintals, one million and four hundred
thousand pounds green to each quintal
acc't. of estimation of Val. of the day.

The fact that the contracts
don't have been validly concluded
has caused no little trouble.
countries where the use of the medicine
has become almost universal.

The English government with
the characteristic energy which
it is always displaying when the welfare
of its own subjects is involved has
endeavored to obtain the highest
celerity. It instructed Mr. Clement
Markham to attempt

the introduction of the guinea-bearing plants into India. He procured a large number of plants from South America but they were so much exposed during their passage over that only a few of them survived the voyage.

Subsequently he was more successful and in the year 1861 he had succeeded in starting over two thousand plants of the several varieties on the Nilgerry Hills near the Government Gardens India.

The plants at the last account were in a very flourishing condition some of them beginning to send forth branches. Attempts are being made to introduce the cinchona tree into Ceylon, Jamaica, Trinidad and other localities.

It is well known that the Dutch have succeeded in introducing the valuable plants, the cinchona and

Peru. They have now upwards
of half a million of young trees
chiefly of the calisaya species
and it has been satisfactorily
proved that a higher percentage
of alkaloid is obtained from the
trees growing in Sava than from
those which have flourished in their
native forests. So jealous however are
the authorities of their success in
the experiment that Dr. McLean,
on a recent visit to that island
was prohibited from bringing
away a single plant or seed.
See *Nature* recently. *Journal Med. France.*

In 1828 the Society of Pharmacy
of Paris offered 6,000 francs to which
the Minister of War added 4,000
francs for the discovery of a substitute
possessing equivalent febrifuge properties
to quinine or for the artificial formation
of the alkaloids. Fine lessings were sent

no neither of which well thought worthy
of a bribe.

It is not improbable that the naturalist
may yet discover or the chemist by his
synthetical manipulation invent a
substitute equal in all respects to quinine.

Indeed it would be a strange provision
of nature if among the medicines
which she has bestowed so lavishly upon
diseased humanity there should be only
one for malaria.

Although quinine has no equal
as an anti-intermittent, it is not
without its rivals. A cursory notice
of some of them will be given here.

First among the list is Acemic
(Gr. apoenekos, masculine). So named from
its masculine power in destroying
men. Speaking of its use on aye
Dr. Watson says "It carries with it these
marked advantages: it is efficacious;
it is cheap; it is tasteless. It will

adapted by these qualities for the poor
and for children and for patients of
every age and rank in whom there is
much irritability of stomach present;
but then it has also the serious objection
of being an active poison. One over-dose
may be fatal; and even its long
continued use in minute doses leads
sometimes to evident and lasting
disorder of health. Arsenic therefore
is an unsafe remedy to be used in
the hands of the ignorant. It should
never be administered except under
the immediate supervision of a medical
eye; and even then it requires to be
given with much caution.

Dr Eberlee and others think that
its use is contra-indicated in persons
of cachectic habit or of scrofulous
tendency as it is apt to cause drowsiness,
effusions and symptoms of general
depravation of the system. Its use

is introduced also in philosophical combinations
and where a strong iodine's influence
prevails. Pereira says his remedy
has been more successful in the
healing of .^{the} Graciosa
claims that in aque arsenic
possesses the advantages over quinine
that it may be administered
with safety during the course,
but admits that it is perhaps easier
to arrest the disorder by quinine
than by arsenic, for arsenic may
be given in large doses which can
not be done with quinine. From the
above authorities we may justly
conclude that arsenic is a powerful
but unsafe remedy and one not
very suitable to subdue the vice
of quinine. Sulphide of Zinc would
next among the remedies administered
against iodine. Dr. Oberlein says it has
very rarely failed to effect a cure.

large amount being with it as with
opium Dr. Smith found it to cure
cases in which bark and... we
had failed. Dr. Gilbert Blane saw
in London and the West Indies
cases of intermittent cured by
the oxide of zinc which had
formerly resisted the Peruvian
bark. Dr. Wood speaks highly of
sulphate of copper as an anti-intermittent.

"Dr. Miller's Ointment" was
much used by the medical physicians
as an anti-intermittent. Dr. George
Sawyer of Hillesdon, Md., in a com-
munication to the Boston Med. and
Surg. "Review," Oct. 16, 1832 gives the
following formula for its administration.
Dr. Polacco nitratis, grs x; Spt. Vin. gallii
in aqua f Zsp. Dr. Take immediately.
The addls: The above prescription
I have used with great success
in the cure of an intermittent fever

even where quinine has failed. In my opinion no preparation is equal to it if it possesses antifebrile properties complete and may be administered when the stomach would not tolerate quinine. I deem it a specific in ague for I have never failed to arrest the paroxysm if uncomplicated. You will also find its effects are less violent & relaxe than those cases created by quinine. In a cold state if administered in a full dose and the patient be placed in bed and covered with blankets he will in a few minutes experience considerable heat which will be followed by copious perspiration and every unpleasant feeling will cease. When it is more agreeable the powder may be placed on the tongue and permitted slowly to dissolve.

I shall not attempt to explain the action of this medicine on the system in the cure of ague but will leave that to older heads than mine to determine. Still we know that after it is taken into the stomach and absorbed it has the chemical effect of changing the dark-colored venous blood to arterial or at least it changes its color. It acts on the kidneys as a diuretic, producing diuresis

as well as diaphoresis; and in this manner may
rid the system of the poison that causes apes,
provided that poison is produced by the retention
of mucus in destined for excretion." This medicine
in its operation more clearly reveals the
mode of curing this malady than any other;
as she cures by copious diaphoresis as well as
diuresis or in other words by perspiration.

I contend that this remedy possesses no
meritages over any other now in use, especially
in its antiseptic properties which it possesses
perfectly.

Dr. Calcagno, of Sicily, and Dr. Bulent,
physician to the British forces at Palermo uses the
charcoal with success in the treatment of
intermittent; and as sulphur has been highly
spoken of as an antiseptic by Dr. Smith
and Dr. Dickson, perhaps we shall next find
gunpowder recommended as a remedy for
ay. A most singular remedy has Dr.
Dr. Held, in use as a combination
in many the met of the black powder. It was

mentioned as early as 1644 by Thunier in his
Discours. Dr. Gillespie used it successfully
in more than sixty cases while attending some
French prisoners on the Isle of Hay. Subsequently
Dr. Robert Jackson used it with marked success
in the West Indies. It is, I hope, to prevent the
recurrence of the calamitous paroxysms more
abruptly and more effectually than even bark or
arsenic. Perhaps the success of the remedy might
have been attributed, in part at least to the active
bleeding vomiting and purging process which the
patients were made to undergo at that time.

Dr. Jackson says "Vomiting, spasms and rushing
in the bowels appearing as modes of febrile irritation
are usually relieved by it. There was no heat
from it where the vomiting and diarrhea was not
without inflammation or progress of suppuration". Dr. Oberle used it with but little success as a
febrifuge. In his own person it produced but a most
seizure-like state of mental and cerebral tranquillity
far exceeding that which it can produce.

Dr. Combe found it in many cases to supersede

the European physicians at present will in a
few cases it failed. Dr. Seveles' late however
in one of the days though limited was anxietyous
that of Dr. Dickson. Cimicine has many strong
advocates especially among the Italianists, and
Dr. Belli of Venice and Dr. Gordon of Leyden
after using it extensively in leprosy, also that
have arrived at the following conclusions: 1. The power
of cimicine is both energetic and rapid. 2. As
it is used much, or rather that it diminishes it is
more convenient than anhydrona and its succedanea
exhibiting a great activity in a very small quantity
and neither causing rheumatism nor ulceration of the
bowel. 3. secretion of the skin is increased and regularized
and the necessary secretions are rendered thicker and
more efficient in healing ulcers.

Another remedy which has been used of late with
success of intermittent and several other diseases
which has a singular virtue that is the extract
of colchicum brought into use about the year 1790
and was given for a long time in the treatment of chronic
isection of the eye, especially the gland in 1793

treatment of scurvy, typhus and other fevers.

Thomas Garnett of Glasgow went so far in his experiments with it as to make a careful calculation of the exact amount of oxygen introduced to the system by a given quantity of the chloride. In 1851 Mr. Leembert of Paris anticipated this result, his experiments with this remedy which occur to me show that it had no oxygenizing power whatever. It is dissolved in the *Salsola* within five minutes of its ingestion and leaves nothing later in the urine. The duration of elimination does not seem to depend on the dose. The process reaches its maximum in about half an hour lasting from fifteen to twenty hours. Mr. Leembert took twenty grammes daily for several days successively with no disturbance of the system. Mr. Gouyot with thirty grammes (or 450 nearly) with impunity.

According to Mr. Leembert's observations it acts when given in large doses as a diuretic and exerts a sedative influence upon the circulation when unduly excited. Dr. Barnes Eakland recommended its use as prophylactic and cure for epidemic fever. Many physicians in this country

have used the chloride in various forms from
fevers but not with sufficient success to warrant
us respecting it with confidence in its action
on the system. is not much unlike that of
the nitrate of potash. The theories advanced
thus far concerning the action of these two
salts must be hypothetical. For the observations
of the chemical theory do not explain how the
venous blood is changed to arterial, or how its
arterial color will be becoming oxygenated.
The salt nor can the chemico-physiologist tell
how the oxygen changes the blood until it shall
be eliminated through the seclusions in the same
state of combination as was given.

There are many other remedies belonging
mostly to the class of tonics little known which
have been used in the treatment of intercurrent
sickneses with decided success but they
will hardly be mentioned in this article
as they are confessedly inferior to those for
noticed.

March 3. 1855.

Diagnosis is that part of medicine which has for its object the discrimination of disease; and is one of the most important branches in that study.

Correct diagnosis is to the physician what the chart is to the mariner; by it we are enabled to avoid the dangers, which, like sunken reefs in mid-ocean, are ready to wreck both vessel and pilot.

False diagnosis pronounced by a young physician (in an enlightened community) might in many instances, not only kill the patient, but ruin his own future prospects.— For example, a case of smallpox if not recognized early, might most prove dangerous to the patient; & render treatment difficult, or prevent proper treatment, and to the physician, from his failing to know

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and worse of the disease; and in
community at large, who suffers
from its effects, would not give to
it interest, this error of omission,
especially if coming from a known
doctor.

This disorder is not ~~so~~ easily
known at first as are many others;
commencing as it does with the usual
symptoms of all febrile diseases;
it has at its commencement, symptoms
common to this, (and not common
to other forms of fever,) by which it
may with a tolerable degree of certainty
be known.

Disease in any distribution from the
standard of health is the term,
it may be organic or functional,
involving one or all of the organs
or their functions; and according
that degree of severity in its course
either in time or extent, will

recommendability of the physician's treatment
provided it is in accordance with increased or
decreased.

Symptoms, we may call them, are
the evidence, which is definitely substantiated,
the of increased, reduced, and decreased.
A diagnosis is it, which is made by
directly observing more closely and often
than than all others. A physician
at first application, would not know
it with all its details, probably with
the same application, some progression in

The disease, a physician
practitioner must record in a
measure able to understand symptoms
or understanding, there is to know
the evolution of, and the particular
disease with which he has to do, and
and from that knowledge will, in
finishing be concerned.

All physicians forming the organization
of disease, are addressed not merely

to one or two, but to the aggregate of our senses. - Not one of our sensory organs ^{but} is capable of receiving more or less valuable information on disease and upon that degree of perfection attained by cultivation of these facilities will much of the skill of the practitioner in recognizing its nature and character depend. —

The eye determines in disease, the various circumstances in which condition of the external organs, and insufficiency of the secretions and excretions, or in which the expression of countenance and position of body are indices, — Heat or its absence, dryness or moisture and that volume of signs, the pulse are presented to the mind by the sense of seeing. —

The ear determines the existence, character and intensity of sounds more particularly those of the respiration or speech. —

I'll smell although generally considered
of less importance than any of the
senses, it occurs in some of those
degraded forms of disease, by a patho-
nomonic sign, neither to be measured
by blood or urine, as any one who
has perceived the sour emanations
from that seamy & stinking disease
Forsythia, will readily believe, —

And lastly the sense of taste may
be relied on, if we are not willing to
rely by the decision of the other sense
in the diagnosis. — In disease, at
least, Diabetes, —

Symptoms may be divided into
Vital or Physiological, and Physical.
The vital symptoms are such as the
pulse, the existence of pain, the loss
of expression &c. —

The physical symptoms are those that
consist of morbid changes, disorders
or impeded functions, and ultim-

Physical symptoms are the more common
and less likely to mislead, and by far
will be connoted with more exactness
than the subjective sensations of
isease, — but the advantages to be
derived from the close consideration
of the combination of both symptoms
of disease, cannot well be overlooked,
or dispensed by prudential for curative.

Of all the symptoms fever is the most important, and can not
be omitted one in diagnosis, varying as it
does in kind, and degree according
to its locality, or the different form
of morbid action which it accom-
plices. —

Now the pain accompanying
acute inflammation differs from the
attending those diseases which are
indeendent of it in that it varies
according to the different organs or
tissues involved in inflammation,
for example, the pain accompan-

Pneumonia, differs from that of Glear in pneumonia the pain is variable; the inflammation is less violent, the pain is slight, and it is felt in those cases where the disease is acute in the inflammation that the pain is severe.—

Leaving from the commencement is characterized by a sharp stabbing pain, usually situated beneath one of the breasts.—

Sometimes it is a matter of the greatest importance that the exact nature of the tissue diseased should be known, also whether that disease be inflammatory or not.— It is very important to distinguish between "Pneumonia" (inflammation of the bronchi) and certain tubercular processes existing in the same organ, as the treatment in the two cases would be very unlike.

A pathognomonic sign may often be found, by "Manual exploration" — by percussion and auscultation.

In Inflammation the patient will generally perform service for his back, changing his position as little as he can possibly avoid, and the suffering will be greatly increased by pressure in the "Epigastric region" —

In Inflammation or colitis at the stomach the patient will be apt to assume a variety of attitudes, and the suffering generally relieved by a Catarrhal Inflammation

If the bowels pass in moderation or constipation, and the remedies improve ^{the} patient, — and here we have the same means of discrimination as in the last named disease, — the former Inflammation being increased by pressure, while that of colitis is lessened, or at least not increased worse by it —

Maintaining exploration is a valuable assistant in the diagnosis of disease, where sympathetic or exist to bewilder the practitioner —



those pains which appear in a part distinct from that affected by disease, - an example, pain in the head from inflammation of the stomach. - pain in the right shoulder, from inflammation of the liver; - pain in the mamma from disorder of uterus &c. - It is always a question of importance to discernable between pains arising from disordered functions, or vascular changes, and those arising from sympathy. -

In making out a diagnosis the physician will often be aided very much, by knowing the proctology of the patient, - his natural life &c. - and the treatment of the same disease, in many instances, might be materially assisted, by the possession of such knowledge by the physician. For instance



Dropsy may arise from organic disease of the heart, or in the vessels — as a sequel to convulsion or of drinking too much "Bad Rum" — and the physician knowing the previous ^{history of the} patient, would soon himself recognize it when on his diagnosis, & from that his plan of treatment.

When valuable information will be given the physician, by the patient or attendant, and if he gives too much credence to such information, and pronounces his diagnosis from it, without making due examination, he will too often find himself wanting right on the subject."

Newton Bushnell, M.D.









Pneumonia,
by
Cyrus Edwards Humiston,
of Cheshire Conn.,
Candidate for the Degree of Doctor of Medicine.

Pneumonia.

This is one of the most

dangerous diseases the physician has to contend. It may occur at any age, but it is more frequent among children and young people. Under the general head of pneumonia, the Bible and the New Testament say nothing about it; but the term is frequently used in the New Testament, the Greek word being πνευμωνία.

The name probably comes from the Latin word *pneumonia*, which applied to the affliction when first described. It is only one of the

Lobes of the lung, being older when exist-
ing in fulness than the body, and
Doubtless their fullness and insufficiency
leads to a common preoccupation of its
course through three clearly defined stages. These
are first, the stage of Enlargement, second
the stage of Effusion, and third,
the stage of Atrophy.

Causes.

Like the Pleurisy in general, the
most common causes are extreme heat
and moisture, sudden alternations of
temperature, and in the child also
anatomical tendency predisposing, and
certain Epidemic influences. It is also
an occasional result of Rheumatism.

Symptoms.

These are, in the acute case of it:
affection, well-marked rigors, hardness in
the back and limbs, a feeling of oppres-
sion of the chest, and the usual indi-
cation of the early stage of fever.

This is succeeded after a period of variable duration, by thickening of the pharynx, labored respiration, and cough. The sputum consists of a dull, offensive character, the pul-
lous, foul, and greenish; the expectoration particularly ineffective and unsatisfac-
tory. The expectoration is at first
scanty and colorless, but soon becomes
more copious, viscous, and heavy, and
changes in color to a reddish brown
from admixture with blood, constitut-
ing the "rusty effusion" so uniform-
ly mentioned in the literature of
the Disease. Not unfrequently how-
ever, several of these symptoms are
wanting, and the Diagnosis is difficult
without a resort to "Physical Ex-
amination, the signs furnished by
which deserve the highest consideration,
The stethoscope has done much to
increase as well as to disprove, and

leading to conclusions which are very erroneous. In the stage of Engorgement, percussion yields a dull sound beneath the scapula or at the side, the respiratory murmur is feeble, and respiration becomes less perceptible, and the bronchial sound more evident, both from the cessation of the vesicular sounds, and the superiority of the solidified, over the healthy lung, as a conducting media of sound. When resolution occurs, these sounds reverse their course, and the crepitant sound makes in the normal respiratory murmur. When the disease advances to the second, or stage called by Laennec that of red hepatisation, the voice often becomes more perceptible, and constitutes more particularly the distinguishing sign of this stage of the affection. In this stage the dulness on percussion is more marked. The

tubular sound is more clear during expiration, because the pressure of the respiratory muscles tends still farther to condense the lung, thus exalting its power as a conductor of sound. Third Stage or stage of Suppuration. In this stage, percussion is less dull from the fact that the consolidation begins to give way to suppuration, and some amount of air reenters the diseased structure. For the same reason, the respiration sounds less tubular, and ronchi can be heard in various parts of the chest. These ronchi are usually moist, from the presence of the purulent matter with which the lung is infiltrated. The advent of the third stage is apt to be heralded, in a sense of coldness amounting in some cases to positive rigor. The expectoration is thin and dark,

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reservoir of pus. It may
and often does not fully
heal, and the abscesses
are all the while.

Diagnosis.

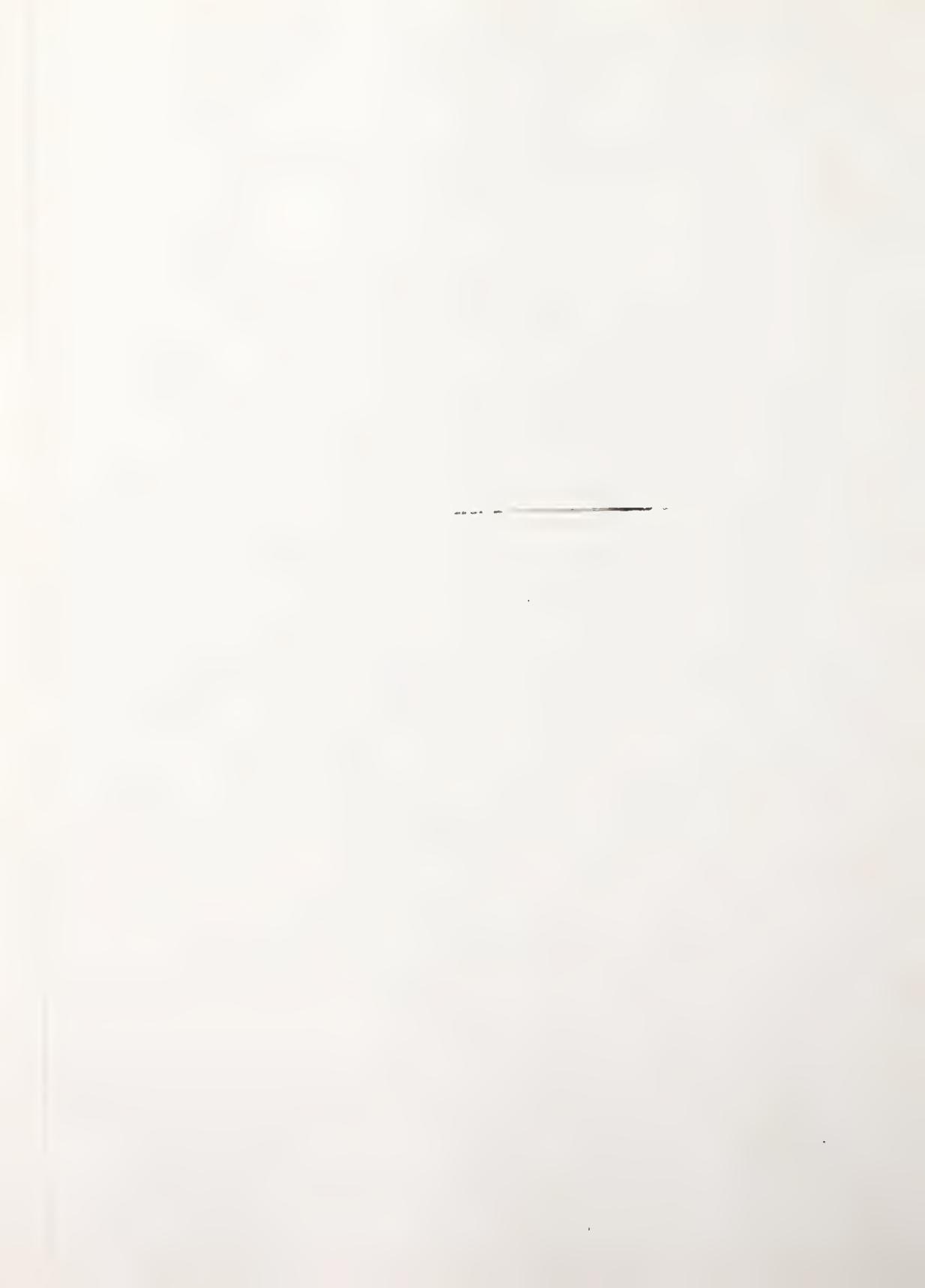
This is a chronic disease, a
disease which is not easily
diagnosed at first. The
patient comes with a dry
cough and headache, and
the head and body are hot.
He does not have any fever,
but the skin is very hot,
in uncomplicated Pneumonia, and
the skin is not hot in the
first stage of the disease.
The patient at first has
no pain in the head, but
as the disease progresses
he begins to feel pain.
It sometimes bears some resemblance to
Pneumonia, for which it is
often mistaken, but the



expedited rate, and the absence of rales
on percussion.

Chronic Pneumonia.

This may be either a consequence of
the asthmatic, or may supervene
on Rheumatic, Asthma, or the other
diseases. The occurrence of rales, which
is indicated by pain of the side of a
sharp thinning wind, with a fre-
quent dry cough, periodical fits and
febrile fever. The expectoration of
pus is often enormous from it and dan-
gerous of death, following the per-
tinent danger of suffocation. Circul-
ation of the symptoms is occasioned
by this disease, and from this find
the patient sometimes late the com-
mencement of his convalescence. Neu-
scially the disease for a long time more
rapidly than before. The pulse is low-
er, there are colligative sensations, and
gradually progressive emaciation and



debility undermine the system, which at last gives way, and death by it then closes the scene. This form of the disease is less amenable to Medication than the acute, and constitutes the "fatal tertian" of physicians, and when of short duration the "fulminating consumption" of the vulgar.

Typhoid Premonition.

Since the year 1806, Premonition has been frequently observed to appear as an Epidemic, and attended by an elevation of typhoid condition of the entire system. This disease is described by Dickson, "Elements of Medicine" who was the first to give it an extended notice, as an inflammatory affection of the thoracic viscera, associated with the impairment of the nervous, and a bad state of vasodilation, which characterizes Typhoid fever. At the time above mentioned, it appeared at Huddersfield, Eng,

and was attended with great mortality.
In 1811 it appeared at Philadelphia, in
1816 in South Carolina. It continues to
this day to prevail over all the coast
and bound a footing. This Disease was at
first thought to be new, but it is now
considered as nearly, if not quite identi-
cal with that described by Dr. J.
Stalter, and by the English writers as
spotted fever. As observed in the
United States, however, the eruption
of the skin is not a constant symptom,
and is seldom noticed in specimens
of the Disease at the present time.

Inflammation of various organs by the
fever, besides the lungs, is one of the
peculiarities of this Disease, and at
first led to considerable confusion in
its description, some regarding it as
a true Pulmonitis, while others dis-
carded it from any regular classifi-
cation, regarding it rather as a

Hybrid malady, constantly varying
its manifestations, and difficult to
treat as a distinct affection. Thus,
as rigors, or headache, or delirium,
became the predominant symptom,
the Epidemic was called the "Cold
Plague," the "Lead Plague," and
the "Bilious Plague." But for the
reasons previously stated, the term
"Typhoid Fever" is perhaps most
descriptible. Its exciting cause and those
which develop acute Typhosia,
while a predisposition to its attack
exists in those circumstances which
deprive the vital energies, as want of
cleanliness, insufficient or unwholesome
food, a confined or impure atmosphere,
excessive fatigue &c. The other features
are those of the febrile affection, feverish
temper, &c. & so also modification.
The cold stage is common to both, &c. &c.
Following this is either pain of the head,

back, chest, and limbs. At first it is
stiff and sore; being in motion it ex-
hales and aches, and is often violent. The
pulse is small, frequent, and con� pect-
tive; the respiration is laborious, as if
there were burden off load the throat. Along
with this there is dry cough, and great
prostration of the body. If the disease
leads to resolution, about the tenth
day there is a mitigation of the affection;
the pulse grows fuller, the respiration
easier, the dryness disappears, and convalescence
becomes established. In the
favorable cases, however, as the affection
proceeds, the teeth and mouth become
covered with sores, the tongue is
creased, distended and covered with ulcers,
the pulse becomes weak and fluttering,
and the disease runs rapidly to a fatal
termination. The physical signs are but
few on percussion, as in ordinary pneumonia,
with a hardly audible respiratory murmur.

Prognosis.

This is to be deduced from the circumstances attending the case. The affection is of course more grave the later it arrives, and beyond the third stage the chances of recovery are very slight. The same may also be said when the physician is called late, and the patient destitute of proper care and nursing, as is too frequently the case among the poor, clutson. When numerous attacks both brief, or of difficult over an extensive area, the case is one of great gravity, even though the degree of inflammation is comparatively moderate. Symptoms of cerebral disturbance, as delirium or coma are always unpromising. But where the affection is true, the physician not very ignorant; the expectoration copious, and attended by little pain, and the heart & circulation not much accelerated, a favorable opinion

may be given, and it may also be stated
that the disease will terminate in
Pneumonia. While the nose is
always to be regarded as full of dan-
ger, and the pharynx is especially to be
guarded. Sleepless and disturbed
in dark, dry, and fitful temperature,
are circumstances of discouragement. The
ratio of fatality from Pneumonia
is general is said to be, in Manchester,
one in forty; while in New York
City it rises to one in eleven. The mor-
tality is greatest in the variable months
of spring and autumn.

Morbid Anatomy.

The morbid appearances after death
from Acute Pneumonia will depend
upon the stage to which the affection
had passed. The stage of engorgement
is marked by a thick, various color of
the pulmonary substance. Pressure con-
municates a feeling of crepitacium to the

hand while at the same time, there is
an effusion of a foamy or serous fluid.
The organs bear some resemblance to
the spleen, and, containing air in the
vesicles, float in water. In the second
stage, or that of Ripening, the
gray fat is more solid and firm than
is usual to the healthy fat, and
sinks in water. When torn the sur-
faces present a red and granular struc-
ture, not very dissimilar to that of
the liver. The fluid which exudes
pressure is noticed to be scanty, thick, and
bloody, and there is a want of the eructant
feeling observed in the first stage, since
the cells of the tissue are now destitute
of air. In the third stage that of decomposi-
tion, or gray Putrefaction, the blood has
lost all portion of its coloring matter, or
has been removed from the intercellular
membrane by pressure of the accumulated
pyriform matter in the cells, and the ob-

of the lung it will be very
According to Lister, the lungs do not
exhibit evidence of their stages at one
and the same time. This is called
the last of the stages is an effusion and of
unhurriedly no less, and when so it is
equally consequent in the Chronic
Affection. In some cases, the exudation
appears to have been followed, after the absorption of part, by a substance similar
to false membrane, while the portion
of the pulmonary structure in their
immediate vicinity is condensed
hardened. In the Typhoid &c it is
Gangrene is occasionally seen as
result of the debrayed condition
of the system, either isolated or dif-
fused over a considerable area.

Treatment.

If the Disease is of a high inflam-
matory grade from the outset, it is
proper to bleed, and constricting, and

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demanded, should be practised early,
and if delayed till too much respi-
ration sets in, its benefits will be
less apparent. At the same time
it is to be observed that during the mor-
ning, bleeding will be less frequent
than formerly, the flagrant and
strenuous form of "Pneumonia" having
been replaced by that of a lower
grade, in the majority of cases. Since
the Cholera of 1822 there seems to be
a general tendency of disease to favor
the asthenic type. But where the
opposite is the case, as previously
remarked, bleeding, both general
and local will be of benefit. This
effect may be still further perpetuated
by carbonized alumina, which may
be given in the dose of one third of
a grain over two hours. The patient
should be kept as quiet as possible,
and the Balsified Oxygen.

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strictly enforced. Calomel may also be employed with advantage, at first in a full dose, and subsequently in more moderate doses, insufficient to produce purgation. This is best when the disease has advanced to its second stage, and by its means we may hope to leave the amount of mucus which tends to obstruct the vesicles. Should the body have a tendency to pass off by the bowels, it may be advantageously combined with opium. When the skin is hot and dry, cold or tepid affusion to the surface is often very grateful to the patient, and of utility in moderating the general fever. By refrigerating Linphorhelis may be employed as occasion may require. When the pulse becomes weak and frequent, the cominon aperient, and the general evidence of a tickling

to the effect that when it is affected, removal should be had to the softening and stimulating remedies, such as, the green opium. The result of the disease is loss of strength & size. Stage I. affects the head, in speaking of the convalescent, when the great affection of cutting, the cold shivering, the frequent pulse, and the want it might have in mind, the probable approach of the third stage of the disease, and the absolute necessity of substituting treatment; I do not think it going too far to say that I have reputably, in this condition, known it to be the main object of safety to the patient." It probably operate, under all circumstances, not only by a general stimulation of the circulatory and nervous system, but also by a special excitation of the ultimate tissue of the person concerned.

11.

in the respiratory function. The stramonium
tincture is another remedy which has
been exploded in the same strain
form of Pneumonia. Dr. Norwood
was in the habit of giving eight drops
of the saturated tincture repeated
every three hours with the addition
of a drop to each successive dose until
the pulse was sufficiently reduced, or
nausea and vomiting subsisted. When
the medicine is more than usually
disposed to nauseate the effect may
be counteracted by administering a
little morphine. A method of treating
Pneumonia by chloroform has recently
been introduced by the German physi-
cians, and it is applied with fair
ability. When the cough is bur-
ping and constant and the expectora-
tion scanty there would appear to be
an affection to its employment by
inhalation to a moderate degree.

But it is almost unnecessary to state
that all specific modes of treatment
are to be depreciated. We may will,
but we cannot arrest the disease,
and while we are awaiting complica-
tions as they arise, our best endeavor
should be to husband the energies of
the sufferer, until nature gives an
opportunity to reassent her course by fits,
and to break up the chain of morbid
actions.





The Exanthemata.

I am about to speak of a group of diseases which present many points of interest to the practitioner of medicine.

They have received their name the Exanthemata (derived from the Greek ξανθήματα a flower) from an eruption, an efflorescence which appears upon the skin. This eruption although sometimes absent, is generally present, & its presence is often the cause of great & even fatal disorder in the system.

The diseases which constitute this group are, variola, vaccinia, Scarletina, Rubeola, Vancella Pestis & Irys Sacra. There are other diseases which might perhaps be classed with them. Typhoid fever is often accompanied by an eruption upon the skin. Siphilis fever is accompanied by an eruption which was called by Dr. Jenner, the mulberry rash. But the diseases first mentioned are those

peculiarly denominated the Exanthemata.

The general characteristics of these diseases are as follows - They are all peculiarly Contagious diseases. They rarely affect the same individual more than once. They are generally accompanied by fever; this precedes the rash & vanishes with its appearance except in some cases. They are epidemic diseases: often committing great ravages in the provinces where they make their appearance.

I shall proceed to treat of the characteristics which these diseases possess in common, then of the methods which have been devised for guarding against them & finally of the treatment which from their resemblance to each other would be proper for all.

And, first, these diseases are the result of a peculiar poison, introduced into the system from without. We have the most abundant evidence to prove that for each of them there is a specific poison - The history of small pox & of vaccination goes far to prove this. Small pox was

not known in North America before its discovery by Columbus; yet within a generation three millions of scrofulous perished in Mexico from this disease alone. Its introduction there is accounted for by the visit of a negro, at the time suffering under the disease - Again, when vaccination has been introduced the disease has been almost wholly eradicated. What a prospect does this offer to the successors of Dr. Jenner! the whole world may be freed from this disgusting pest, which is the destroyer of health, of beauty & of life.

Then again there diseases do not degenerate into each other. He who has been exposed to the contagion of small pox will be affected by small pox & not by any other of these allied diseases & hence we conclude that for each of them there is a specific poison -

The method by which this poison is introduced into the system is not known. It is in its nature so subtle, that, though evidence enough of its existence may be obtained, it cannot itself be discovered by any of the means which we possess -

The microscope shews nothing in the blood of persons affected by the disease, which can be considered the peculiar poison causing it. We only know that it may be conveyed from an infected person in every conceivable way & that it is often so conveyed when we cannot possibly discover the vehicle by which it is borne.

For instance: a sporadic case of scarlet fever occurs. We cannot learn that the patient has been exposed to any contagious influence & yet the disease may run through all its stages & communicate itself to the whole neighborhood. We know the disease to be contagious when it has once made its appearance; we can conceive of no cause which shall account for its appearance unless it is contagious; or the disease is caused by a specific poison & it is impossible to prove in any case that this specific poison has been generated in the system. What more reasonable inference, than this: that the disease is the product of some unsuspected contagion & that it originates spontaneously. The physician himself may be the poison bearer & instances enough have occurred in other diseases where

this has been the case.

We do not know how long a time this poisonous principle will retain its power. It is said that the vaccine virus may be kept unimpaired for years if properly protected from air & light. We do know that under the influence of free ventilation, of dilution with the external air, ~~that~~ it may be made almost innocuous - And this is one of the points to be regarded in treating these diseases. The poisonous atmosphere of the pest house, shut in from all contact with the external world, is sufficient to prostrate the strongest constitution.

There is perhaps, another source of contagion or rather another means by which the contagious poison may be borne. May not these diseases, originating in a specific poison be caught & given by our domestic animals. Not that a cat or dog might be affected with Scarletina, but may not this disease in a human being be transmitted through a similar affection in the animal, to others of the human species. The probable method by which the poison gains admittance to the system is through the pulmonary mucous membrane; here the blood has immediate communication with the external air & here it

becomes contaminated. Now in our domestic animals the mucous membranes, perform the same functions as in ourselves: the circulation is carried on in the same way; what more probable than that they may be affected with diseases of the same type as our own maladies - The theory has been advanced that the vaccine disease is in reality small pox, modified in its character & lessened in its malignity by passing through the system of the cow. This may not be true: yet it seems a reasonable supposition; or if not why should it prevent an attack of variola which may otherwise be prevented by inoculation with the variolous virus itself.

After the introduction of the poison into the system a certain interval seems necessary for the full development of the disease. This period during which the malady seems to lie dormant, has been called the period of incubation, as if the germs of the disease having found a proper nidus had during this time been rendered fruitless. This period varies in length from ten to twenty days: the mean appears to be about two weeks - During this time there are no peculiar symptoms: although it would seem when so powerful

a malady is to make its appearance as though it had
be heralded by some of those signs which mark the on-
set of disease.

A knowledge of this fact is of value in our diagnosis
of these diseases. Most of them come on with few words
makes its appearance at the end of the period of incubation.
Now if the patient complaining of fever, be in a district
where any of these diseases are at the time epidemic,
he have within two or three weeks been exposed to any
contagious influence, we may rationally consider him
as threatened by the form of disease at the time pre-
valent & treat him accordingly. If the precise time
of exposure is known our diagnosis is rendered more
certain: since the precise period of incubation, for
each of the Ex - is pretty well established -

What is the condition of the body during this period?
As we have said no visible change makes its ap-
pearance: yet the seeds of the disease are there.

We cannot account for it: but we find that the
end of this time the whole system is more or less in-
volved. It seems as though during this period that
the whole mass of the blood had become contaminated

Dr Watson's idea is that the poison introduced in small quantity acts as a ferment in the circulating fluid & that the eruption is a process by which this mass of disease is eliminated from the system.

From the time when the disease makes its appearance to the time of the eruption the malady makes constant & persistent progress. The constitutional symptoms are severe & the local malady the eruption often of great extent. The surfaces of the body are all affected with more or less severity at some period of the complaint. The skin is sometimes wholly disorganized: so that, if the patient recover, the whole ^{even} epidermis comes off in scales, or crusts or in sheets, so that the whole of the skin of the hand may be taken off as a glove. The mucous surfaces too are affected. In both Rubeola & Scarletina the disease of the mucous membranes lining the nasal passages - fauces is one of the most distressing symptoms.

The mucous membrane lining Stomach & bowels is sometimes so severely affected as to carry off the patient.

The serous membranes too are liable to inflammation: perhaps from their intimate sympathy with the skin. The nervous system too, is also implicated & death

sometimes occurs from shock before the disease has made any great progress.

The sequelae of these diseases are often as disastrous as the diseases themselves. Throars, deafness, a tendency to phthisis, inflammation of the bronchial membranes often follow attacks of Scarletina, Rubeola &c. To guard against these sequelae is a most important part of the physician's duty. This we can do to a greater or less extent, by attention to the diet & regimen of our patients.

Another great peculiarity of the Exanthemata is this: that one attack of disease is almost a certain safeguard against another attack of the same malady & this leads us to the second division of our subject: namely the methods which have been devised for guarding against the attacks of these diseases -

Advantage has been taken of the fact before-mentioned. This was first done with reference to variola. The process of inoculation was the first step made in the right direction. In this process the disease is engrafted on to a healthy body.

& allowed to run its course in the natural way. This practice, although not unattended with danger was still in vogue until the time of Jenner who introduced what is now so well & so favorably known, the system of vaccination. Its history & the benefits which it has conferred upon the human race are well known. But inoculation is not confined to variola alone: it has also been tried in the other diseases of this class.

In the others it is not to be depended upon as in variola: yet this may teach us how to protect the community from the ravages of the Smallpox as it already has done with respect to variola.

The fact that diseases of this class rarely occur more than once to the same individual is well known to the public as well as to the profession: and we sometimes hear a mother say that she is willing to expose her child while young to some of their complaints rather than to live in constant dread of their attack at a more advanced period of life. It is a fact that some of these diseases are much more

fatal when they attack adults than when they attack children, hence there may be some philosophy in the reasoning of the mother.

Of the treatment which is peculiarly applicable to these diseases - When their attack is apprehended it seems to me that we should direct particular attention to the general health so that if our patient must go through a course of disease, he shall do through it under as favorable circumstances as possible. Exposure should be avoided. the body should be warmly clad; good food & of sufficient quantity should be allowed & if there be any disorder of the general system it should be removed by the proper remedies -

When the intestinal fever has commenced it is often advisable to give an emetic or an entero-cathartic, which shall remove all irritating substances from the alimentary canal. Then perfect cleanliness should be insisted upon. often a warm bath is of infinite service in removing the dry & harsh skin so constant an attendant upon febrile diseases. We are then to watch for symptoms & treat them

as they make their appearance. The common cooling diaphoretics: Spts Nit. Aeth. Spts Nuxmors, or the afternoon draught are all appropriate at this stage of the disease. Attention must be paid to the ventilation of the sick room: pure air in sufficient quantities must be admitted in order that the poisonous exhalations from the patient may properly diluted & all offensive odors must be removed or corrected. In mild cases these means may be sufficient: but sometimes these diseases assume a malignant form & the shock to the nervous system is so great as to break down the physical strength at once! In these cases we must remember that the patient is about to go through a course of rapidly exhausting disease & that we are to fit him if possible to contend with it. Tonics & Stimulants may be given him from the beginning: Quinine in large doses: wine: beef tea with last. Am.

When the eruption has made its appearance & then generally subsides: then we need only to care for the regimen of our patient: to prevent undue exposure to cold or heat.

If the eruption be profuse, causing great irritation

we must guard against this if possible by the exhibition of narcotics = opium, hyoscyamus &c. If the eruption be so profuse as to cause aditilitary discharge, we must support the strength as in the malignant cans before mentioned.

It is sometimes the custom, when the eruption is delayed after the usual time, to force it out if possible by warm drinks &c. This is never necessary; we may trust this process to nature: for we believe it be her method of cure; but if we find any retrocession of the eruption or any complication of internal disease we may use such methods to bring it back to its proper seat the skin. In such cases the mustard foot bath may be used or saponin applied externally -

The treatment of the Exanthemata resolves itself into this formula: obey the laws of hygiene; watch for symptoms of approaching danger & attempt to ward it off; but trust the greater part of the care to nature, "which healeth all our diseases."

After the eruption has passed off the same care for the regimen of the patient is requisite as during the treatment of the disease. Too sudden exposure to cold or damp is apt to bring on some of the

sequelae of these diseases which we have already mentioned. Too much care cannot be taken under these circumstances. These dangers are not passed with apparent return to health: but they sometimes come on after the lapse of weeks & they sometimes cause as much trouble as the original disease. S.E.D.

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From the Mechanism of Human Movements.

are the two muscles, the pectoralis major and the latissimus dorsi, acting at the front, from the human body, that are well known and described as twisted or crossed muscles. That is to say, their extreme limits of origin have their relations to each other exactly reversed at their insertion, when the arm hangs in the ordinary position of rest. And only three of these muscles out of the eleven, which act more or less exclusively over the shoulder joint have been described as possessing the mechanism of a twist or a crossing of their fibres.

It is here proposed to show: 1^o that in the very extensive motions of the arm there are some advantages arising from this mechanism, and 2^o that masses of muscular fibre in the same joint, other than those commonly described as twisted, do also possess the advantages from an analogous arrangement.

The more evident mechanical results of this twist or crossing may first be considered, as their obscure bearings in the vital economy will be more apparent afterwards. Now it will only be necessary to consider this mechanism in two positions of the arm, the one that of rest, the other in that position of action the most opposed to the first: since all intermediate positions must share to a greater or less degree the conditions of these two. But the motions of the arm, due to its shallow socketation, involve expansion and to the radiating mass of muscles that bring it into play, occupy over nearly the entire extent of a hemisphere looking forward and upward. The two positions of the arm that we have to consider are therefore at opposite sides of the hemisphere of motion, but in the same plane; that is, hanging pendulous and extended in elevation. Now when the arm hangs down, and the two muscles already mentioned are in a state of comparative rest, their insertions upon the humerus are parallel or nearly so with their origins, in the one case along the sternum, ... the other along the spine. But the centers of their lines of insertion and of origin are in the same transverse plane in the Pectoralis major, while there is a great difference between their transverse planes in the

Latissimus dorsi. We are led therefore to consider the mechanism of twisted muscles in two points of view: first, when in the same transverse plane, second, when out of it to a greater or less degree. Further there are three arrangements of the muscular fibers possible. For from the rotation of the arm about one point, they may become un-twisted when the arm is lifted, or become yet more completely twisted, to form in short a sort of muscular strangulation. Now these are arranged so as to become uncrossed, rather than strangulated, and the disadvantage of the latter arrangement can scarcely be doubted. It will not be necessary therefore to dwell upon any comparison between these two. In the other hand these muscles are so twisted when the arm is down, or else by being direct and uncrossed in that position, become so when the arm is lifted. Since the former of these two methods obtains we may presume it has advantages over the latter which though not very obvious at first may by a comparison of each arrangement in the two positions of the arm become evident. We have then to compare a twisted with an un-twisted or direct muscle when in the same transverse plane and when in transverse planes at varying distances of elevation, also the action of these muscles when the arm is elevated and when hanging down.

It is evident that when the centers of the lines of insertion and of origin are in the same transverse plane, a twisted muscle will have the fibers of its muscle longer than a direct or un-twisted muscle similarly situated: and also, that these fibers will be longer as the size of insertion is larger, in they go, not directly to the nearest point of that line, but to its farther point, from above downward, and from below upwards. We have therefore a gain by twisted muscles, when their origins and insertions are in the same transverse plane, of increased length of muscular fiber. This applies to the Pectoralis major rather than to the Latissimus dorsi. But when the centers of the lines of insertion and of

origin are not in the same transverse plane, as is the case in the latter muscle, two facts will be evident on a little consideration. First that while the fibres of inferior origin are in a direct muscle moderately stretched by the elevation of the arm and an extreme variation between the length of its produced they are much less extended in a twisted muscle by a similar elevation. And that, owing to this and to the slightly increased extension of the fibres of superior origin which are but little extended in a direct muscle the two extremes are reduced and a greater uniformity of length in the muscular fibres produced by the presence of a twist when the arm is down. The general principle will further be evident, that a twisted muscle will always have a greater inequality of length between the fibres of its edges than a direct muscle similarly situated, and that this inequality is increased as the distance between their transverse planes increases. Now by the deviation of the arm the distance between these planes is increased. We can therefore see that on this principle also there is a greater capacity of length, involving a twist when the arm is down, instead of when it is elevated, as much as the case were the muscle not twisted in the ordinary position of rest. At the expense then of a slight inequality between the fibres of the muscle when the arm is down, do we have a gain of greater equality in them when the arm is exerted at the disadvantage full length, and we may add the former is a position of ease the latter one of disadvantageous exertion. It is at the point at least however then, that there is, if it be such, of comparative equality occurs.

We have now to apply these facts and principles to two positions of the muscles already mentioned, that of rest or while the arm is down, and that of exact opposition to this or extreme elevation of the arm. It has been shown that when the lines of origin and of insertion are in the same transverse plane, a twisted muscle will have the fibres of each side longer than those of an untwisted muscle, in the same relation of position and that this length is increased as the line of insertion is extended. The very evident law of relation between length of muscular fibre and velocity

shows that there is here a gain in speed of the motion of the joint by the former of these methods of arrangement. It has also been seen that by the mechanism of a twist when the arm is down there is a greatly reduced variation of the position of the muscle and a lesser inequality between the various parts especially at the place of least leverage in extension. Hence, there is a more uniform strain of the tissue there is less friction between the contracting fibres, which has been considered the principle cause of muscular rest, (Purman (Eds. Zool. Anat. iii.) and consequently there is less fatigue. It also seems, though we are ignorant of the nature of nervous stimulus, as though definite amounts of nervous influence should produce definite amounts of contraction, and that is so far where the contractile fibres are various in length there must either be a very graduated flow of stimulus to the different parts of the muscle or a suprasubcortical in the very act of graduating the flow whether consciously or not, is an additional nervous act. In either case uniformity of the contractile fibre appears secured. The gains by this twiced arrangement of the muscular fibres, when the arm is at rest, are, increased length and velocity; uniformity of weight, of strain, and of action, especially at the moment of least leverage, produces less friction heat and fatigue and a probable economy of nervous stimulus.

In the human subject however, where the insertions of these two muscles are only an inch or two in length, the advantages of this mechanism of a twist may seem more speculative than real. But in the human subject the action of raising or suspending the whole body by the arms is only an occasional one, and soon followed by fatigue. Yet if our reasoning has been so far correct, it is to these very motions that the mechanism we have been considering is specially adapted, and we might expect Huxley to find its practical illustration in the constantly swinging and climbing in the arms, in a word, in the monkeys. Now we find the Pectoralis major of the apes described — Cuvier, "Séans Soc. Nat. Comp." T. I., p. 292-3 — as having

its clavicular portion inserted far down the arm, while the lower sternal and costal fibres are inserted right to the head of the bone. The more recent detailed accounts of the muscles of the orang, the chimpanzee, and the gorilla—Leverett, "Archives du Muséum National," Vol. 17, p. 17; Wilder, "Boston Jour. Nat. Hist." Vol. 17. — repeat similar statements. This range of insertion must strike every one as directly applying the principles already suggested. By inserting the clavicular portion quite down the arm and the inferior costal fibres near to the joint the whole muscular mass is lengthened, its fibres are massed when the arm is elevated and made, more nearly uniform when at the moment of greatest exertion. This is more strikingly illustrated in those apes in which the central direct fibres of muscular tissue are wholly wanting, the Pectoralis major consisting of the distinct and separated costal and clavicular portions.

Indeed this mechanism is shown in all those cases where great elevation of the arm occurs when it is in an extended position, as in the mole where the insertion of the Pectoralis major is along the entire length of the humerus. In all these cases also the fibres are so arranged as to be direct at the moment of greatest exertion. The practical value of the advantages we have been considering is therefore made highly probable.

It has been remarked that the twisted muscles are in some animals found separated into distinct fascicles or bundles of contractile tissue, which however maintain by their mutual arrangement the mechanism and advantages of a twist. We are thus led to inquire whether the separate muscles of the shoulder-joint may not to some degree possess an analogous relation in their arrangement and share in its advantages. That is, whether those portions of muscular fibre which arise as distinct muscles from above and are inserted below the insertions arising lower, do so pass by them as to become direct and comparatively uniform when the

arm is elevated. Now it will be found that all those muscles which pass each other toward their insertion upon the arm do so pass as to uncross and become direct when the arm is elevated. They constitute groups of muscles which may be regarded as units of action.

The Teres major in its relation to the Latissimus dorsi illustrates this, as does also more strikingly the Coracobrachialis muscle of the gorilla and chimpanzee with the same. The scapular portion of the Deltoid by overlapping the Infraspinatus and Serratus anterior forms within a group that becomes crossed when the arm is lifted. An anomalous superior Infraspinatus observed during the past winter upon one of the subjects dissected, crosses very completely over the ordinary Infraspinatus to find an insertion down the arm. Upon the anterior side the scapular portion of the Deltoid and the Pectoralis major form another group of crossing fibres that become direct in their action upon the lowered arm. In man, however, there are two other groups of muscles that cross each other near their insertion, the Coracobrachialis and Deltoid major, and in man's exception to this arrangement we it is superfluous to consider that exception. But the muscle of inferior origin, the Coracobrachialis, passes downward wrapped up instead of overlapping the muscle of inferior origin, the Pectoralis major. But in man, because of the position of the arm, the fibres of the Coracobrachialis from their origin on the acromial process, are so directly in the axis of the bone, as to be of little or no active service in bringing down the arm; and they will be found to gain a leverage and to become actively useful, only as the arm is brought more and more into the anterior or front plane of the body. This view, however, is based on comparison by a glance at the comparative anatomy of this muscle. For in the Gorilla, where all the other muscles of the shoulder are immovable at the head, this one is leveraged

quite rudimentary and narrow, and in the apes generally it becomes more or less
a two-headed muscle, being inserted either to the Biceps, or to the Triceps as in the Gorilla.
This wide change of function from flexion to extension of itself seems to indicate that the
action of this muscle in those motions of the arm most common to this group of animals is
but slight, and its general rudimentary condition in them proves this. Its relations to
the axillary and brachial arteries in man may suggest a possible use as preserving
the arteries from pressure in the elevated position of the arm. This muscle, like all
its like, acts as a counteracting inspiratory during the position of elevation of the arm, is
the only one of all the muscles of the shoulder-joint that crosses over it, without any anomalous
analogous to that of the superior and inferior fibers of the coracobrachialis muscle.

To our apes: It has been shown, that twisted muscles in
so free a joint as that of the shoulder, are mechanically superior to direct muscles, by an
increased length of muscular fibre and its consequent speed; and, that by the abso-
lute reduction of the otherwise necessary stretch of a portion of the muscle, together
with a slight increase of stretch in another portion there is an equalization of tension
and of the muscular contraction at the moment of most disadvantageous action, and that
this equalization is probably one of economy. And further that these spe-
cialities are exhibited by the mechanism in those animals that
use the arm largely in the position of elevation. It has also been shown that all
these muscles, capable of acting during the elevation of the arm, whose tendons of insertion
cross, are so arranged as to possess the mechanism and advantages of a twist, and
that they constitute three groups that when regarded as contractile units still

further emphasise the importance and economy of the mechanism we have been considering.

These two points were proposed at the commencement of this thesis.

Synopsis.

I. Propositions of Thesis are stated

II. As to the first proposition;

An examination of the mechanism of the two muscles discussed is only necessary in
1^o Two opposed vertical positions, and in
2^o Two transverse relations.

By comparison of the only three possible arrangements of the muscular fibre,
1^o The mechanical results, and
2^o The advantages of the existing mechanism are perceived.

These advantages are best shown by the comparative anatomy of the muscles under consideration.

III. As to the second proposition

There are three groups of muscles that illustrate the same mechanism.
The exceptional muscle is not active in the elevated position of the arm.

IV. Hence the objections advanced are still held to.



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Rheumatism

There are a multitude of painful and distressing diseases by which man kind is doomed to suffer at least a part of his existence. Of this class the one most common in this country and with which the physician practitioner meets almost daily is, Rheumatism.

Rheumatism is characterized by fever pain in the joints, with redness and swelling. It is an inflammatory affection, but the inflammation is different from that which is the result of other causes, for it is specific in its character and attacks fibrous tissue especially; it also invades other tissue at the same time, but it is generally conceded that the fibrous tissue is the first to suffer, and then often the bone by consecutive synovitis. All these processes may

in this way becomes affected by rheumatic inflammation; at a time, the inflammatory action having spread from the surrounding fibrous texture, is the ~~of~~ ^{the} general membranes of joints, and the vessels, membrane of the heart, the pericardium being most commonly affected which is a fibro-sinous substance. Therefore, although it has a special tendency to attack fibrous tissue, yet this is not the limit of its actions.

Rheumatism in its action differs from other diseases in some of its effects, at times also in this important respect, that it has no disposition to dominate in ulceration or suppuration. It may become so intense as to excite the common form which will run its course and result speedily, in simple rheumatic inflammation always, after the irritating cause has been removed, ends in resolution. Rheumatism is divided into Acute and Chronic. The first manifest symptoms of the acute

form of this disease are, a sense of chilliness alternating with flushes of heat, a general looseness of the body and pain in the joints. As the severe attacks increase the disease becomes less & less remitting with increased frequency; skin hot and dry, tongue coated with a whitish film in the heart, face flushed, constipated, weak, urine scanty and high colored.

As the disease becomes developed, the joint's suffering are aggravated by the local debility which is generally seated about some of the larger joints, and after suppuration will be found swollen and red with extreme tenderness to the touch. This is the common feature of acute rheumatism, although these symptoms are not all present in every case of this disease. There may be intense pain of a part without any perceptible enlargement or redness to indicate the existence of inflammation, and on the

other hand the local symptoms may be much modified by the general febrile condition existing, so far, at least to any considerable degree.

The pain is a permanent one, especially locally, yet it is absent from one part of the body or joint to another which so actives affords a limited amount of relief to the patient.

This migratory pain is called metathesis. A person suffering from rheumatism may complain of a severe pain in one of the knee joints which continues for a time, and then it will suddenly disappear, perhaps, and occupy the other, or it may continue to migrate from one to another, now still nearly every ~~body~~ part in the body is affected at the same time with diminished power; it is not generally however confined to some of the larger joints; the extremitie, in the human ^{or} apes ~~and~~ and monkeys, not as frequent in the

shoulder or hock joints. At times it leaps to some violent rage, rending up the skin of the patient in proportion to the intensity of the affection; it is ready to attack the hand if immersed in the solution, it is very painful, if there is much irritability of the organism existing with the disease. Metastasis is sufficient to give rise to morbid matter contained in the blood, generally regarded as being of acetic acid, which acts with great violence upon fibrous tissue, has been experimentally demonstrated. On these principles act upon inferior animals.

The disease affects four quarters. Some features contrary to those which are seen in other forms of inflammatory disease, & never takes the typical character, and those prominent symptoms that are seen in continued disease, such as nausea & vomiting, disordered condition of the bowels or zordes about the

however violent its action is; when death does occur it is almost always due to cardiac inflammation. The fever appears to be specifically associated with this form of inflammation, owing, perhaps, to the peculiar character of the poison contained in the blood.

Acute pneumonitis is considered by some authors in two distinct forms. As fibrosis and suppuration. In the first the first intensity of the disease is manifested locally and constitutively; it attacks the lungs first in the immediate vicinity of the points, with more or less pain, tenderness and swelling which increases as the disease advances, presenting a surface streaked with red lines.

In this form the patients complain of pain in the joints and often of epiphyses. These are active in a high degree, and may bring about a secession of the joint. It is removed by the forcible perpiration and continual

pain, &c. The distinction of the disease
the great tendency of the inflammation to
attack the heart renders it dangerous to the
life of the patient. The swelling of the
joints affected, depends partly upon the
turgescence of the blood vessels and partly upon
the effusion of fluid into the cellular
tissue.

The general pain is generally mild
in its nature and is not of so long duration.

When the swelling of the joints appear
the constitutional symptoms partially
subside; the tongue is less furred and the
palps become softer.

The pain is directly in the joint
as it appears, and the swelling is produced
by the effusion of fluid into the cavity,
so that fluctuation is sometimes
perceptible upon examination of the
joint.

Acute rheumatism is most apt
to occur between the ages of fifteen

and forty years, seldom taking the
cold & wet & dry. It comes & is recorded
of children at two or three ^{years} of age
being attacked by it, generally affecting
the heart, and with almost always with
fatal result.

The causes which produce this
disease are many the most common
of which are exposure to cold and moisture,
atmopsherial visitors during the
spring and autumn months, particularly
amongst the poorer classes whose circumstances
cannot furnish the necessary protection
from the raw damp atmosphere to which
they are exposed. The cold rest upon the
surface closing up the pores of the
skin and the perspirable matter is
retained, & is conveyed by the circulatory
system, acting as the conducting
agent. It is said by some writers, that
unless this predisposition exist exposure
is not followed by a termination

inflammation, and if it is found in the
blood surface is not necessary, in order to
exist the disease. Oxygen is said to be
a powerful modifying agent in reducing
the systems more susceptible to the action
of infection, violent exercise and a pure atmos-
phere followed by sufficient sleep is the
most exciting cause of acute inflammation.

This disease is not considered dangerous
to the life of the patient in its
earliest character as long as it is confined
to the skin or to the mucous surfaces,
whose functions like does not immediately
stop and ^{specify} general ^{types} of life threatening
or destructive effects of the disease.
When it is transferred to some vital
organs as the brain heart liver & lungs it
becomes extremely fatal and other
factors. The duration of the disease is
variable and depends partly upon weather
and greatly upon the constitutional

feebly, it is usually recognized at
the beginning of life. So, the
disease is about terminating there is
no difference, the face is less
swollen & the pulse more rapid than
before, & a pale sediment settles to the
bottom of the bath tub before the
child. It will now be able to lie in bed
and the fever gradually subsides
from the system.

It now becomes the first care of
the physician, after curing the
acute stage of the disease to effect the most
judicious plan of treatment to insure
a speedy convalescence. There is a great
diversity of opinion respecting
the best mode of treatment. The
different methods of treatment are
best to be collected in
three classes, viz., physical, medical
and dietary. The author of this work
entirely rejects and condemns the

These remedies have been employed sometimes with success, and so often times

If the patient is young there is
severe pain and a full hard pulse, a
process of heat from the
beginning the first stage of the disease
is for the patient to rest, the
pulse will be slow, the suggestion
is that the patient shall be of
no other exercise. This remedy is
not suitable for all cases and
the following treatment
will be more appropriate. If the pulse
be weak, it is to be observed
that the pulse is feeble and
the circulation is impeded
and the heart does not beat
with sufficient force and power of
circulation. This being the case a
strong and active heart will have
the most marked effect in
the recovery of the patient.

it takes a long time after which; often
the bark does not fully rot off,
unless a soft gentian with which Calomel is
combined. Calomel and Jalap, given in
large doses is recommended as a cathartic
at the commencement of the disease.

Blanked inflammation in some cases is
manifest by continuing to purge the patient
with Calomel for three or four days;
until the excretion becomes more of the
natural color.

It is administered in doses from
five to twenty grains at first and
followed by a draught of salts and 20
grains the morning. Reasons of a certain kind
of body present here. Considering first
of treatment, therefore when the excretive
effect of Calomel is tested it may be com-
bined with Opium in small doses, followed
at times with a cathartic. There is
indispensable drug in this as in almost all
other purgative cases and should be

in full doses repeated at short intervals until the pain and irritation ceases. It is well known that the patient can obtain rest. Calomel is the most efficacious drug, in some cases, and is more successful as the disease advances. The character of pain; it may be given in doses of twenty drops every four hours until it affects the bowels, and then it should be discontinued. Alkaline preparation have been largely used to reduce the action of the effector parts of the disease by neutralizing the acid poison contained in them. The bicarbonate of potash may be given in doses from half a drachm to two drachms, in oil, in every two or three hours until the articular inflammation is relieved. Some prefer the acetate, but it can never be used in quantity for more than a few drops with aromatic water.

The patient should be required to keep perfect quiet both body and mind, and

It takes first, while the infusoriness
of opium does not; it is of
superior value, as it is less irritant than
the bark of the big tree, and a
little opium will do away with all the accessory
wines. One or two drams of the wine of
the bark of the ^{the bark} big tree, administered in the
two tables or water. To this infusion the parts
may be wrapped, & placed over the part,
soaked in a hot alkaline bath; or
immersion of alkaline water for
several hours. If the suppuration of the
abscesses, & open in the nose of the child
seems to be best taken out by the
action of the sea, & fractional doses,
small febrile and intermittent fevers,
cold sweats & difficult respiration.
If this and the vapor bath are used to
give a great relief to the patient's
sufferings; the opium to be given in
sufficient doses to quiet the pain, and

be sufficient to be written on the
of the following as "old" for old
and "new" or "modern" for new.
This will be the saving of time
of finding old letters and the waste
of the best of the money, & the loss
of time in examining before each
one.

W. B. H.

Aneurism.

The following are fatal tumors caused by blood, and communicating with an artery, divided either in part, or entirely, so as to dilate it.

The classification of hemorrhaged tumors, &c. from the subject of being called either aneurism, and manner of the division and subdivisions of different writers, which were of but little practical importance, have served to embarrass the student more than to advance the cause of science.

It is now generally admitted, that the division of aneurism into true and false, is important, and should therefore be retained. The same is true of spontaneous and traumatic. The term true, is applied to that form of aneurism in which one or more of the coats of the artery form the covering of the tumor.

A false aneurism is one in which the coats of the artery have been ruptured, and the blood being forced out, forms a tumor, of which the surrounding cellular tissue is the covering. Each of these grand divisions comprise several varieties, founded principally upon the form and volume.

the tumor. Thus an aneurism is said to be circumscribed, when the artery is enlarged only in a small part of its circumference, and has a distinct border.

The diffused aneurism, consists of an enlargement of the whole circumference of the artery, and has no defined border, but fades off gradually into the healthy tissue. This form of aneurism is for some writers called tubular, and occurs most frequently in the aorta and the large arteries given off directly from it, especially the ilio-omnata, subclavian and carotid.

The false aneurism, is also called in the same disease. There is another form of aneurism called dissecting, which is formed after the coats of the artery become diseased, by a rupture of the internal, and separation of the laminae of the middle coat; the blood thus flows along dissecting up the walls of the artery. This form is confined principally to the aorta, and is always fatal.

The vessels which are most liable to spontaneous aneurism, are first the aorta, and the other arteries in the following order. popliteal, femoral, common carotid, subclavian, ilio-omnata, axillary and external iliac. If a spontaneous aneurism, it may occur in any of

those which are not of external origin,
injury,

The predisposing causes of spontaneous aneurism given by different authors, are many and various; but the most constant, and therefore the most important, is a diseased condition of the arterial tissues, usually presenting itself in the form of earthy and atheromatous deposit.

Age, sex, and climate, have also been included among the predisposing causes. How far any one of these causes is capable of producing aneurism, is a matter of conjecture, but that the disease does occur often in males than in females, that it is rare prior to the age of thirty, and that in certain localities spontaneous aneurism seldom occurs, is an established fact.

Symptoms.

In spontaneous aneurism, which usually depends upon the rupture of one or more of the coats of the artery, the patient may first be apprised of the disease by a sharp pain, resembling an electrical shock, or he feels as if something had suddenly



greatest worry, and the excretionation of the body, the
disease is a non-infectious one, and the
disease remains on the patient, it usually occurs while
the patient is engaged in some form of bodily exertion.
But in the majority of cases, it is not the manner in
which the disease makes its appearance, it is not
generally distinctly marked in the beginning, and
the patient may be aware of the fact,
in this case, until the disease has made much serious
progress; this is especially apt to be true if the tumor
consists of a dilated condition of all the arterial
coats. In many cases however, the opposite is true,
in this, the characteristic symptoms make their
appearance immediately after the patient's
affairs. If the tumor is external, we find certain
symptoms from it, which will generally enable us
to determine its peculiar character. Pulsation is the
most obvious and constant one, the tumor when
pressed is found to receive an impulse synchronous
with the contraction of the left ventricle of the heart.
If the tumor is in a recent stage, it is soft and pliant,
and may be emptied of its blood in steady pressure.

Upon afflicting the sac - the tumor, a sound and
man be heard, generally of a sawing, rasping, or
whizzing kind. It may be heard several inches
from the tumor. It would be difficult to be
deceived by the blood rushing into the sac, and is
variously modified according to the thickness
size of the sac, & the pain attendant upon the
disease, is constant, but varies indegree with
the size and position of the tumor, it is now
said, occurring most frequently in the sac, more
about the gluteus. The immediate causes of the
pain are inflammation of the sac, and as the
tumor increases in size, pressure upon the surrounding
structures. The pressure on the sac often causes numb-
ness, and a sense of aching and weariness of the
limb near to the tumor. As the tumor increases, the
blood is conveyed to the limb below, and we have
a consequent diminution of temperature, but this will
soon disappear, as the collateral circulation becomes
sufficient to supply the limb with its accustomed
amount of blood. The course of the thoracic artery,
innominate, and carotid arteries, is always,

also, in will shorten days, week, even more
and, impulsion of the heart; of the larger
arteries of the abdomen and penis, by interfering
with the return of blood in the vena cava,
may occasion serious functional disturbance
resulting in ascites and anaesthesia.

Fig. 112.

The "tumors" we see are described by most
writers as "benignous and distinct, with errors
of diagnosis have occurred; were with the most difficult
and varied symptoms, so it is in which
mesentism is most liable to be confounded, as chronic
abscess, glandular tumors, and encephaloid growths;
the tumor is a solid, firm mass, situated
in the course of some large artery, is hard and
fusible, and is a malignant tumor from the moment
of its development, as it less in the substance, is
hard swelling on the side, and goes through the
different stages of inflammation, and becomes soft, when
the hair has fallen, and is devoid of pulsation, palpation
may be simulated by a tumor lying directly over the trunks of
the arteries. We can discriminate between this and an ulceration by the

character of the pulsation. An aneurism causes a tumor of moderate size, a sudden swelling in every direction which if grasped by the hand will be perceptible while the other tumor will be slightly raised from its position without any enlargement in circumference.

Glandular swellings are most apt to appear in the neck axilla and groin, in children and young persons affected with strumous diathesis. On the contrary aneurism is most apt to appear in the popliteal, femoral and carotid arteries, and after the middle period of life.

Encephaloid growths are generally attended with that peculiar slate of the system known as the cancerous cachexia, which is always absent in aneurism.

The size of an aneurism may be diminished by pressure upon the cardiac side and increased by pressure upon the distal neither of these symptoms would be

present in an abscess, or solid tumor.
The peculiar whizzing sound, which is generally present, in aneurism, is said never to be in other tumors. When there is doubt as to the character of the tumor, after the most careful examination, the only resource, is to insert a delicate exploring needle which will at once determine the diagnosis.

The effects which an aneurism will produce, upon the surrounding parts, will depend upon its size, and position. If in the neck, we may have embarrassment of deglutition, or more commonly, interference with the functions of the phrenic, glosso-pharyngeal and vagus nerves. If in the chest dyspnoea, resulting in defective oxygenization of the blood. In general we may say, that aneurismal tumors, by their continued pressure upon surrounding parts, will destroy what ever tissue comes within their reach. Thus the femur

has been found completely cut through, the vertebrae, with their bodies almost entirely removed, the sternum perforated, the ribs wasted and the clavicle divided.

Although aneurism most commonly terminates fatally, without the intercession of art, yet it is occasionally true, that a spontaneous cure is the result. This is accomplished by the formation of a clot within the aneurismal sac, which prevents the influx of blood, and ultimately converts the sac into a solid tumor.

Treatment

To arrest the hemorrhage and to relieve the patient of a mortifying disease. Although other Surgeons had applied the ligature for the cure of aneurism prior to his day, yet, the operation was performed immediately above the sac, where the artery was diseased, and in most cases terminated fatally, so that Dr. Park, in his edition of Keen's Surgery, quotes but one successful case.

amputation should be resorted to in
such instance. The Hunterian operation,
which is the one now generally advised,
consists in selecting a healthy portion of
the artery, at some distance from the tumor,
on the Cardiac side, great care being taken
in exposing the artery, not to separate it
from the sheath farther than necessary.

The ligature is then applied, and drawn
sufficiently tight to cut through the in-
ternal coat; one end of the ligature cut
off, and the other brought out of the wound
at the nearest point. The ends of the wound
should then be brought together and secured
by adhesive straps. The pulsation in the
sac will usually cease immediately
after the application of the ligature.

After the operation, the patient should be
placed in bed, with the limb in an
easy and relaxed position, and if there
be a diminution of temperature, it should
be enveloped for some time in padding.

All cold & moist should be avoided; a full aërodyne administered immediately to control the action of the heart, and light diet and cooling drinks observed. The bowels should not be opened for several days, and then with the mildest laxatives.

Murdie's operation, or ligation of the artery at the distal side of the tumor, has been performed in several instances of aneurism of the carotid artery with success, but is advised at the present time only in aneurism of the circumflex, and the result here has for the most part been unfortunate.

Compression when the swelling arises from tumor, was first distinctly proposed as a remedy for this disease, by Mr. Finch of England, early in the present century. His theory was, that compression must be applied continuously, so as to arrest

the circulation, and, reduce & contract
of the inner coats of the arteries. This
Treatment was occasionally followed
by success, yet it was accompanied by an
excruciating pain that but few patients
would submit to it.

In 1843, Dr Bellingshane of Dublin
pointed out the true principle upon
which compression acts so powerfully,
as was not necessary to obtain it continuously
and firmly as formerly supposed. that the
object being simply to reduce the flow
of blood, sufficiently to prevent it.
This latter accomplished by a gentle
and intermittent pressure, than by con-
tinuous. Of this method Ferguson says.
So far as our comparatively limited experience
in the method of pressure, as followed by the
Dublin Surgeons will enable us to form an
estimate of its value, it seems, in many
respects, if not in all, preferable to that
by dilation of the main artery, and

there seems three great advantages in it, that if it does not act satisfactorily, the Hunterian operation may still be resorted to with so much probability of success as ever, while for its application, none of those formidable dangers are incurred, which are the well known consequences of the application of the ligature.

Digital compression was first successfully employed by Prof. Knight of this institution in a case of popliteal aneurism. It has been successful in cases where mechanical compression had failed, or was productive of intolerable pain, and in no instance on record, has it ever been productive of any bad consequences. It is to an aneurism of the extremities, that this method of treatment is principally applicable. Dr. Gross records nineteen cases in which digital compression was applied to the femoral artery, for popliteal and femoral aneurism, of which thirteen cases were cured, in a period required for the cure of aneurism by

This method, is much shorter than by any other known treatment. Thus if the eyes are injected the shortest time was then under a half hour, and the longest, seven days making an average of two days and two thirds.

Another method of treatment, which is, perhaps, worthy of notice, is the injection of some of the styptics into the sac. The great obstacle which has thus far prevented the success of this treatment, seems to be the production of inflammation, suppuration and in some instances even gangrene of the lacrimal sac and surrounding structures. It is maintained, at the French hospitals that there are no such side effects as inflammation and gangrene which will follow an injection of a styptic into the lacrimal sac. I do not, however, know this to be a fact, as it will rank among the most severe treatments in the treatment of eye diseases.

Rubola, Morbilli or Measles.

The most common technical term of this inflammatory eruptive fever is Rubola or Morbilli. There is no characteristic distinction with American, French or English physicians between the names both used by them synonymously denoting one and the same disease; but German physicians regard them as names denoting two different diseases. They apply the name Morbilli to well authenticated cases of measles while the term Rubola is used by them to designate an entirely different malady called spurious measles. This disease was described by Dr Willan under the name of Noseda. Until a late period in the history of medicine the diagnosis between Scratatina, Rubola and Variola was not well understood and we are indebted to the study and investigation of modern physicians for the distinctive characteristics between the eruptive fevers. Measles may prevail epidemically at any season of the year, it is most prevalent however during

The winter and spring months. Neither is it confined to any particular class or age of persons. Physicians are more commonly called upon to treat this disease in children from the fact, that they are equally liable to its contagious and epidemic influences, but after having been once affected with it, its prophylactic power generally renders the system safe from a second attack as do most other specific diseases, a regular form of measles does not usually occur but once in the same individual, there are instances upon record of the disease affecting the same person more than once. I think that the prophylactic influence of this disease renders the system more secure against a second attack than does Scarletina or even Small Pox. As in Variola so also in this disease some persons have the power of resisting the contagious influences of measles. They being often exposed but do not become affected with it. This has been noticed in the same family a portion of its members has had well marked cases of measles, while some others of

the same family escaped with impunity. It is said that children are sometimes born with this disease, the mother at the time of her confinement well, she having before been affected with it. Also that the mother and child may be affected with it simultaneously the child being in utero. Measles is said to be capable of being produced by inoculation, though with much less readiness and uncertainty than Small Pox. There is no advantage by this manner of introducing it into the system as it is not rendered milder or less dangerous. A peculiar circumstance connected with the contagion of Measles is that if the patient has been affected a sufficient length of time with the disease and then be inoculated for Variola its influences upon the system will be stopped until the fever of the first has finished its course, after which time the virous of the second will take possession of the system; this is probably owing to a law of Nature viz. two diseases as a general rule do not run their course at the same time.



Measles like other eruptive contagious diseases has its stage of incubation, its introductory fever, and its particular kind of eruption. In the system of Nosology this disease has been divided into three classes, viz. Rubiola Vulgaris Rubiola Sine Catarrho and Rubiola Maliana.

Time of Incubation.

The number of days which elapses between the introduction of a morbid poison or principle into the system and the evasion of the disease itself is from ten to sixteen days.

Introductory Fever.

This stage of measles begins with lassitude, chilliness and shivering succeeded by heat, thirst, anxiety, pain in the head and back; the mucous membranes of the air passages are usually attended with more or less inflammation consequently we have sneezing also a copious effusion from the lacrymal glands, and from the nasal cavities. The throat is affected; the faces are red, and there



is usually present a dry, hoarse cough-

Eruptive Stage.

On the fourth day of the disease we have a determination of vesicles to the surface of the body showing itself in red spots; in children of very delicate skin it may be seen on the third day - it may also be delayed until the fifth in those who have a very thick, brown skin; this unlike Variola does not produce suppuration, unless a few milky vesicles mix with it which is not usually the case, but the disappearance of the eruption is followed by desquamation of the cuticle. The eruption first makes its appearance upon the face, neck, upper extremities, and then reaching the body and so travelling down until it covers all parts of the patient, usually from two to three days, in this particular it assimilates small pox; it fades away in the same order in which it presents itself; after it is fully out, it remains upon the face for about three days, then begins to fade away so that the whole time occupied by the eruption is six or seven days.

it becomes of a dark or brownish color as it declines. The spots are small distinct from each other leaving a portion of the cuticle uninregnated with the eruption; where they make their appearance they are circular presenting something of the ordinary appearance of flea-bites, in a short time they coalesce forming places of an irregular figure assimilating to a semicircle, easily distinguished from scarlatina by their being slightly raised especially on the face, so as to give a sensation of inequality to the fingers if passed over the surface. The eruption may also appear upon the mucous membranes lining the mouth and throat, and it is said to afford to us the best place for forming our diagnosis as to the character of the disease. In the African Race, I will here notice two important distinctions between Rabbola and small Pox in regard to the effect of the eruption of the two diseases upon the system. 1st The constitutional symptoms or fever is not in this as in small Pox, checked or even lessened at the time of the appearance of the eruption. Secondly the severity

of the disease does not depend upon the amount of the eruption, as does it in small pox; this may be accounted for in variola from the fact that we have ulceration and suppuration of a large portion of the integument covering the body, which is very freely supplied with nervous fibres of common sensation, consequently producing great nervous prostration similar to the effects observed in extensive burns. There being no suppuration in measles the eruption does not thus affect the system, but in some of its most aggravated forms the eruption may be, and often is of a dark color appearing late and only partially covering the body, it being of a very irregular form.

Complications.

There are various complications sometimes connected with or following measles which are to be more dreaded than the specific disease and they should be carefully watched for by the practitioner and symptoms treated as they present themselves. We may have as complications

Gargitis which a disease bearing some resemblance to croup, it may however attack persons of advanced life while croup is usually confined to children. Bronchitis or inflammation of the lining membrane of the bronchial tubes the capillary bronchitis. Pleuritis or inflammation of the pleura. Pneumonia or inflammation of the parenchyma of the lungs. Also in summer we may have Dysentery which usually proves fatal. It is not an uncommon thing in children for diarrhea to supervene owing to the change state of the mucous membranes which line the nasal cavities the Trachea and Bronchial tubes. We may have copious hemorrhagic discharges presenting themselves in the form of Epistaxis and in females we sometimes have uterine hemorrhage. Should any of these be present they must be treated as idiopathic affections. There are sometimes peculiarities in the manner in which the disease makes its attack. The eruption may present itself before any appearance of Constitutional disease. In other persons

We may have Catarrhal symptoms for several days preceding the eruption. The rash may also appear without Catarrhal symptoms or but very little fever. Nosologists have described a disease styled Rubiola Sine Catarrho or French Measles. In this form of the affection we have slight fever but no signs of Catarrhal symptoms, but the prophylactic power of this form of the disease is considered by most physicians as wholly nugatory, affording no protection against the recurrence of the malady, but rather rendering the system more susceptible to a regular form of well defined measles.

Rubiola Maligna.

This form of measles is not very frequent; but when present it is more liable to prove fatal than the other forms, because the fever assumes a low typhoid state, the fever and Catarrh are more severe. The eruption earlier and all of the concomitant symptoms are much aggravated. Inflammation of the

texture composing the lungs and abdominal viscera often prove fatal in this form of the disease. The respiration and the heart action are much accelerated. The pulse is frequent, soft and compressible. The eruption differs both in regularity and color, sometimes making its appearance and then soon disappearing without relieving the but rather increasing typhoid prostration. The eruption on different parts of the body presents various appearances, it being at one point red, at another dark, livid and interspersed with ecchymosis and petechiae. We usually have dark offensive stools, also tenderness over the epigastric and abdominal regions. The brain becomes affected through sympathy, consequently there is present delirium with coma and in children we frequently have convulsions. All of the vital powers are much depressed.

Sequel of Measles.
These are often more detrimental than

The immediate disease on account of its leaving the system so susceptible to local inflammation, and if exposed to cold during desypheration and convalescence, disease may be produced in the lymphatic system. It sometimes happens that a person to all appearance has fully convalesced from measles still Pulmonary Consumption and hectic fever may afterward present themselves and thus cause the vital thread of life to be severed. Another bad consequence of measles is that the lower bowels may be left in a debilitated state and chronic diarrhea ensue. In scrofulous children there is frequently following this disease an affection of the lymphatic ganglions producing troublesome inflammation of the glands of the neck and other parts of the lymphatic system.

Diagnosis.

This is not usually very difficult but we should be guarded about giving a name to the disease before its nature is fully

ascertained, but should wait until the pathognomonic symptoms more definitely delineate the disease, for should we be so unfortunate as to give a wrong diagnosis our mistake might be attributed to want of proper medical knowledge concerning the affection which would prejudice the minds of community in regard to the ability of the attendant especially if a young practitioner, in most cases however it will be safe to announce the disease providing it is attended with all the premonitory symptoms which I have before mentioned, especially if there is measles in the vicinity.

Prognosis.

In uncomplicated cases of measles it is favorable. The chief sources of danger are the complications which sometimes attend the disease, also the character of the epidemic and the type of the prevailing fever. The prognosis is unfavorable when the eruption makes its appearance before the third day when it

Suddenly disappears, while the skin presents a dark leaden hue. Petechiae, Ecchymosis, or Considerable dyspnea are also unfavorable symptoms. When these symptoms are present we usually have a typhoid state of the system and if of a Crofulous diathesis we may have ulceration or even gangrene. Weather also has much influence upon the severity of this affection wet seasons being most unfavorable.

Morbid Anatomy.

The morbid appearance in those who have died of this disease has usually been confined to the lungs and Intestines. The lungs show marks of inflammation and at times a tendency to gangrene. Should the patient die in the eruptive stage of the disease, the trachea and Bronchial tubes, as in Small Pox will frequently be found covered with it, and this may account for the increased cough during the eruptive stage.

my Treatment.

In mild uncomplicated cases of measles
the physician should allow the to run their
course without much medical interference
it will be his duty however to keep the seve-
tions in a healthy condition, and the patients
in a cool well ventilated room, on spare
semilient diet. Should the bowels be
constipated it will be highly proper to
obviate this by administering laxatives
such as the Neutral Salts, and if necessary
enormous clysters. Venerection should not
be used indiscriminately in this affection,
but with great caution, I should not doubt
the propriety of this potent remedy in a
case accompanied with a full strong pulse,
severe pain in the head and back, difficulty
of breathing, excessive coughing and other
symptoms denoting inflammation of the
lungs. I would usually proportion the
amount of general bleeding, to the arterial
excitement, and should not the

other symptoms be sufficiently relieved
the general bleeding may be followed by local
bleeding; this generally the best way of taking
blood from very young children. The application
of a blister is of great efficacy in removing
local inflammation, and should be used
if called for. In weak & rachitic children
they cause trouble on sores and in some epidem-
ics have a tendency to produce gangrene
in such cases they should not be used; at
times the inconvenience apprehended
by blisters may be prevented by interposing
some substance between the plaster and
skin, or the blister may be removed after
having remained upon the part for two
or three hours, then dress the surface with a
soft-irritating poultice. In short the
inflammation preceding, accompany-
ing or following Measles should be treated
on general principles, regardless of the
exanthemata

Should there be great fibrile excitement,
thirst and continuous restlessness,
Ipecacuanha, or small nauseating doses of
Antimony combined with some refrigerant
medicine as Nitre may be given every three
or four hours. If the cough is irritating or
and very troublesome it will be admissible to
give some Pectoral, those of a medicinal
nature are to be preferred, as they will best shield
the rawness and sereness of the throat which
often accompanies this disease.
At the same time the patient may use
barley water, Mescaline Gum Acacia or
Decoction Hordi Compositum slightly acidulated
with Tartaric Acid. We should be cautious about
using Opium in this as in other inflammatory
diseases, it may do well in some cases
by relieving the irritation and thus redu-
cing the inflammation. I should think however
it should not be used when there is a high state of fibrile
action attended with much difficulty of breathing
until after these symptoms have been relieved by bleeding

after which time it will prove useful in subduing watchfulness and relieving cough. If the secretions be much diminished or of an unhealthy quality they may be regulated by alterative doses of mercurials. Should there be a retroception of the eruption we must treat the cause. If it is produced by cold use the (warm) warm bath give diaphoretics and stimulating drinks. If the cause should depend upon debility direct some of the diffusible stimulants such as Ammonia Camphor, or Aether combined with Tonics. If called to a malignant type of measles it would require altogether different treatment than that which I have recommended for the inflammatory ^{form} of the disease. This kind requires a general tonic ^{mean} also internal external stimulants.

Frank P. Cuttle





A General Description of Simple Gun-Shot Wounds.

Under the term gun-shot wounds are included all injuries produced by missiles discharged from firearms, either directly by immediate contact of the ball, or the scattering of splinters of wood, fragments of stone or any substance which the ball may drive before it.

Gun shot wounds partake of the character essentially of contused and lacerated wounds, and are attended by more or less pain according to the sensibility of the patient, the extent of the injury and the occupation and position at the time when received. The hemorrhage is usually slight unless the injury is very extensive; there is generally a gush of blood at the moment the wound is received which soon ceases by the contraction of the small vessels which have been divided, and the formation is regular.

A certain constitutional collapse or shock follows every wound of a violent character almost immediately, but sometimes does not occur for several hours, and is more severe in proportion to the extent of the injury, and the peculiar mental constitution and nervous development of the patient. The duration of this state of de-

presence should excite suspicion of the dangerous character of the wound, which nothing but the subsidence of the peculiar symptoms should remove, for often the internal injury is far greater than we might at first suppose. Severe collapse sometimes follows very slight injuries, this depends much upon the manner in which the person is engaged at the moment of injury, if in the heat of battle where the nervous excitement is intense, he is suddenly stricken down, the state of depression rapidly follows in proportion to the amount of excitement previous to the injury. The shock is caused in some instances by the extreme fear which some persons have of gunshot wounds, believing that if a ball strike the head, thorax or abdomen it is therefore necessarily fatal.

During the stage of collapse the patient lies cold and half unconscious, the face is pale and anxious, respiration feeble, pulse small, weak, sometimes fluttering and irregular. The question now presents itself to the surgeon: "Is it best to rouse the patient from this state of collapse?" this must depend upon the nature of the wound, if the ball has penetrated any of the great cavities, it may have wounded many

vessels, which it might be impossible for the surgeon to secure, and now it would seem that collapse is nature's safeguard, for during the depression, the formation of coagula is favored and hemorrhage arrested.

In the treatment of collapse the patient should be carefully watched where the injury has been severe lest the prostration be too great in extent; stimulants should be judiciously used, and warmth by means of blankets to the body, and hot bricks or bottles of warm water placed to the feet. It is not best to arouse the patient too soon, unless the wound be superficial or in position where no large vessels are injured, when the patient should be rallied as soon as possible.

Hemorrhage to any great extent does not generally follow a simple gun shot wound for the blood vessels are so much lacerated and retracted within their sheaths that coagula rapidly form plugging up their extremities. The extent of the hemorrhage depends much upon the calibre of the artery.

Intermediary Hemorrhage may occur when reaction begins, and should be guarded against by having the tourniquet applied if the injury is where it can be used, it should be placed loosely around the limb ready

to make immediate pressure, should this fail and the bleeding continue, the artery must be cut down upon and both extremities secured.

Secondary hemorrhage of any amount does not often occur from small vessels. On the separation of the slough there is sometimes slight bleeding, but requires but little attention. From the larger vessels hemorrhage sometimes takes place to an alarming and fatal degree, and may be caused by any sudden motion or exertion of the patient, or from any excitement increasing the rapidity and force of the circulation, thus pushing out the coagula which had plugged up the extremities. It may occur from sloughing or ulceration, or from a peculiar hemorrhagic diathesis induced by the exposure consequent upon a long campaign, improper diet, and an absence of vegetable food causing scurvy, the blood being incapable of forming coagula sufficiently strong to close the extremities of the vessels.

Secondary hemorrhage usually occurs between the eighth and twentieth day, and if the wound be in the immediate vicinity of a large artery, a tourniquet should be loosely applied, and the attendants instructed

in to use it, in case bleeding should commence. It is best to ligate both extremities of the vessel when possible; so that collateral circulation may not cause a renewal of the hemorrhage. In some situations it is impossible to ligate the bleeding vessels, as parts are often so swollen, discolored and agglutinated that they cannot be found. We have as an instance, wounds of the interosseous artery of the arm, at times it is impossible to find it, being situated beneath the deep flaps of the forearm; so that the brachial has to be tied instead. The same trouble sometimes exists in wounds of the palmar arch, pressure upon the radial and ulnar will not always stop it, and the brachial has to be tied.

It is often impossible to distinguish which of the openings is the orifice of ingress, and which of egress, or whether the openings are produced by two separate balls, much can be ascertained by the position of the patient at the time of injury. Two balls sometimes enter the same aperture, diverge and pass out at different places, thus making three holes at once, giving the impression that the injury was received at different times and appearing as if one ball had passed entirely through

and the other had lodged. Sometimes balls enter and split, either from striking against a sharp edge of bone or from some defect in the manufacture of the missile. This occurs more often in the common round musket ball, than in the minnie or conical ball.

The wound of entrance of the common bullet is usually circular, slightly depressed, and raised about the edges; The wound of exit is larger, more ragged and its edges are everted. Balls on entering meet with some slight resistance, such as bone or fascia by which they are turned aside, and passing around superficially on a rim of bone or a muscle, make exit somewhere opposite the orifice of entrance, thus giving the idea that the ball had passed entirely through the part, so also balls have been known to enter and being turned aside by some slight resistance, have passed completely around the body, and made exit at the aperture of entrance; They are often expelled through the same opening by the elasticity of the parts; sometimes a ball will carry a pouch of shirt or other garment before it, which being withdrawn brings the bullet with it, so that it does not always follow that because but one opening can be found, therefore the

bullet has lodged. The course of the ball may generally be ascertained by the finger, bullet probe, forceps, scapo or may bougie, or if it has traveled under the skin, by a bluish or dusky red line of inflammation which appears a day or two after, sometimes its course can be determined by an emphysematous crackling. The parts along the track are very much broken down, and the vitality destroyed.

In the Treatment of simple gun shot wounds a careful examination should be made with a probe as soon as the patient is seen, and if possible before inflammation and swelling has commenced, as it will be less painful to the patient, and more practicable to the surgeon. It is of great importance that all foreign substances, such as balls, speculae of bone and cloth should be removed, this can generally be done by the various instruments made especially for the purpose. Sometimes a ball cannot be felt with the probe on account of some diversion from its course, but may often be felt by the fingers through the soft parts, and should be removed by incision when practicable.

On the reception of the injury a simple dressing of lint, cotton or linen cloth wetted with cold water is all that is necessary, this may be retained by

adhesive strips. Bandages at this stage should be avoided as they not only increase pain by their pressure, but become stiff, hard, and dirty with blood, thus rendering them very uncomfortable and decidedly unsightly. These cold applications may be used as long as agreeable to the patient, that is, during the stage of inflammation preceding suppuration. When cold becomes disagreeable it may be exchanged for warm applications, such as lint dipped in warm water, placed upon the wound and covered with oiled silk to prevent evaporation. Poultices are of great benefit during certain stages, they are useful to alleviate pain, stiffness, swelling and to encourage the suppurative process. They should not be kept on too long, but removed as soon as the desired effect is produced, and recourse had again to hot or cold water dressings. Dressings of cloth smeared with a little oil or simple cerate are often serviceable in tender wounds, relieving the feeling of stiffness and preventing the cloth from sticking to the wound, thus disturbing the parts when taken off.

Inflammation of muscular parts generally begins from twelve to twenty-four hours after the injury.
The wound begins to be extremely sensitive swollen and

discolored; a reddish serous discharge now makes its appearance, the swelling increases from deposition into the surrounding areolar tissue, and extends above and below, giving a hard stiff feeling to the touch. It becomes exceedingly painful to the patient to have the limb moved, the inflammation still increases and about the third day the discharge grows thicker. About the fifth or sixth day the slough begins to separate, the discharge becomes more purulent and mixed with thin fluid.

As the healthy action goes on pus is abundantly secreted. From the eighth to the tenth day the slough is almost entirely separated from the track of the ball, the discharge increases until all intraneous matter is removed. Granulations may now be seen through the pus, the wound gradually fills up by first contracting in the middle, and healing towards the surface. The granulations are often exuberant, but may be reduced by application of powdered alum, or caustic, at times they are pale and flabby and require stimulation, this may be easily had by the application of a solution of the sulphate of copper of the strength of five or ten grains of the sulphate to the ounce of water; this may be applied to the wound

by means of lint once or twice daily, until the desired effect is obtained. A light touch with caustic will generally increase the vitality of the part. Powdered cinchona is often serviceable when sprinkled upon the wound, dilute solutions of the chloride of zinc are often used with good effect. The fibrin and serum which has been thrown off during the process of inflammation is now gradually absorbed as the vitality of the part increases, the discharge of pus decreases, and finally the wound heals leaving a characteristic cicatrix.

During treatment the constitutional effects should be carefully watched. The patient should be placed in a large well ventilated apartment, everything about the wound should be kept scrupulously neat, he should have a soft nourishing diet, where the inflammation is not severe. Stimulants and tonics are very useful adjuncts at certain times.

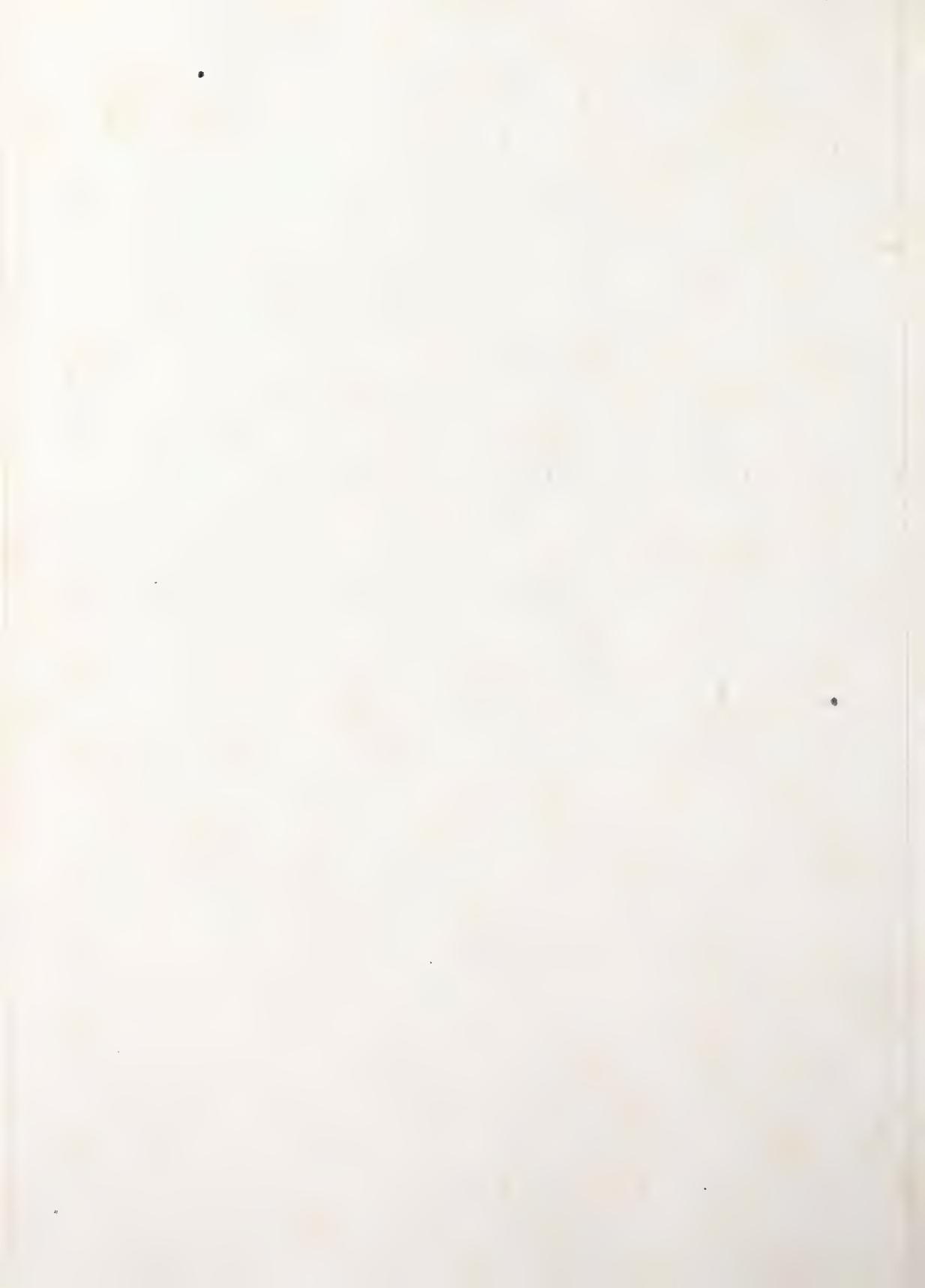
Of the various complications, such as fractures, erysipelas, mortification, amputation, hecti and the resultant constitutional effects it is not my intention to speak; nor will time allow a description of wounds in particular regions, tho

thesis being rather a description of the phenomena
of simple gun shot wounds.

Of the kind of wounds produced by the
different projectiles now in use, much might be said
each being to a certain extent characteristic of itself,
and requiring slight modifications in the treatment, a
description could scarcely be undertaken in a thesis
with any claims to a prescribed length.

A Dissertation
on
"Yellow Fever."

By
J
F S Meadow
J



Yellow Fever

In medical literature this affection is now so well known, and is universally recognized by the name at the head of this page as to render unnecessary an enumeration of its synonyms.

In America it is met with habitually, in the West India Islands, the Atlantic cities, and Gulf shores, south of Charleston, the latter included. It has occasionally been seen as far north as New York, and Boston, and on the Mississippi, as far up as Memphis; which has been its northern limit in the Great Valley. It has also appeared in inland towns, and in plantations, near the river banks.

It is probable that 15 miles is a great distance

is said to have been known to exist
between navigable water and the
low-lying at sea of Sidonia.

It frequently originates and
prevails indiscriminately on shipboards,
where the affected sailors have
satellite been to ports where the
fever was or prev. In some very
marked instances, it has occurred in
well, without the operation of
malaria ague. As the case
cited in ("a rock") relating to
the frigate "Concord" which
left Newport for Havana, before
making port, yellow fever appeared
on board, although it was not
prevailing in Havana at the
time. When occurring thus,
it disappears at once, it begins
in the middle of the day
and subsides at the same
time, unless the ship is not

dependent, where, consequently,
there is the greatest amount of
moisture and heat.

Wherever it may occur it
often exhibits a remarkable ten-
dency to limitation of species, for
example on Bay Street, Savannah,
in 1854 within the space of
two blocks, the majority of the
trees occurring in the first three
weeks of the epidemic, were con-
fined to that locality; and in
1855 all the trees were confined
within an area of four acres,
in the north eastern part of
the city.

It is however to meet with
during the latter part of the
month of July and continue
until till the appearance of
frost, as we suppose, i.e., in 1854
till the last frost which re-

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-curved in the early part of November, no new cases were reported.

Some authors assume that a certain degree of heat ~~is~~ necessary for the development of the disease, also that warm wet weather is propitious to its development; but the testimony of Dr Blair of Demarara, Dr Gandy of Savannah and others, conclusively prove, that more or less rain, or a greater or less degree of heat has very little to do with the production of yellow fever.

Neither age, sex, or condition are sources of exemption from this dread scourge; it may rear and prove fatal at any time of life; in the costly residence of the wealthy, as well, as the humble home of the laboring

man. That men die in larger numbers than women admits of self evident explanation.

Most writers on the subject agree that in comparison with other races, the negro is least liable to be attacked with the disease. In this country, this exemption is in direct ratio, to the amount of African blood, the more the Caucasian the greater the liability. The full blooded African rarely contracts the disease, even though freshly imported from his native country, and placed in the midst of an epidemic.

Of all persons, soldiers, and sailors, suffer most from Yellow Fever. It is also very fatal among prostitutes, many cases have been cited in some of the Spanish

visitations, among those suffering from venereal or chronic disease. Any complication which tends to lower the standard of vitality, is a powerfully determining cause of the malady. Excessive indulgence in sexual intercourse should be especially regarded in this light.

Residence in yellow-fever countries for a long time is acknowledged to exert a certain prophylactic influence. Thus in healthy years what are called sporadic cases, are confined to strangers, and in years when the disease does not prevail so generally as to amount to an epidemic, the serious cases are confined to the unacclimated. In epidemics the natives and old residents are frequently ~~and~~ mildly attacked; but strangers

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and generally seized, and have in fact to bear, the violence and malignity which belong to the fever.

A person may be said to be thoroughly acclimated who has previously had yellow fever. Instances it is true, are recorded in which two well marked attacks have been observed, but the testimony of all extensive observers, goes to prove the extreme rarity of such exceptions to the general rule. And in my opinion, I doubt if the removal to, and residence in countries exempt from yellow fever, ~~will~~ has the effect of lessening the probability, lasting influence of accimation.

Our knowledge of epidemic influences, is altogether too limited to arrest our attention here; nor

Can we foretell whether or not ^{the} yellow fever will prevail in any given year from our present acquaintance with its nature and history.
Let it be hoped that the day may arrive when our ignorance on these points will be enlightened. Miasmatic fevers have only to be understood, to be diminished at once from the disease under consideration; the following principal differences it will be well to bear in mind.
Yellow Fever is almost strictly un-
fined to large cities, miasmatic fevers are more prevalent in the country. In miasmatic fever one
attack invites another, in yellow fever one attack prevents another.
Miasmatic fever may be cured by some of the preparations of Park. "Yellow Fever season" &c

work in still 2 years. And small
as it is by Dr Arnold. Yellow Fever
has never been known to prevail
where Bilious fever was not endemic. Bil-
ious fever in its most malignant
form, is known to prevail where
Yellow Fever has never been seen.

The greatest medical proofs of
the contagiousness and communica-
bility of Yellow fever have been
obtained, and learnedly discussed
and from our present knowledge
we should infer that there is
no danger in allowing contact
between persons ill of Yellow
fever, and others in good health
the latter being in places where
the disease does not exist epidem-
ically; although it is probable that
certain articles of merchandise, of
dress, or of bedding, may carry
material which under peculiar

Circumstances tends to develop the fever. Infested ships are especially to be avoided, and to abandon strict Quarantine restraints, would be to put a premium on human life, and further it for trade.

The symptoms are various. The attack may come on suddenly, as is commonly the case; or it may have the usual prodromal, & febrile affections. Usually a chill is the forerunner of the violent pain in the eyeballs, over the forehead, or in the neck back and limbs. Neuralgic symptoms are scarcely ever absent; it is observed that the first manifestations of the fever, uses the recurring periods during sleep, showing some to feel an apparent good health; in other various afflictions the majority of cases

commonal during the day, thus
is afforded another element in
which they differ from the fever
under consideration. When the
previous symptoms exist there
are either neuralgic or the pa-
tient complains of languor, weak-
ness, furred tongue, chilly feelings.
The inevitable chill may be pre-
ceded two or three days by these
disturbed sensations.

^{stage} After this succeeds the febrile
affection as a rule no extreme
heat of ~~the~~ body, nor quickness
of pulse - in fact many times
the temperature, equal to however
are so slight as to afford no
indication of the gravity of the
case; even if there is some heat
of the skin, it seldom lasts
beyond thirty six hours, when
it is followed by the cessation

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of the liver by a decided diminution below the healthy standard.

The capillary circulation is easily congested, and irregular in its distribution, there is great tendency to a fall of temperature in parts of the body kept uncovered a short time, this point is of importance in the treatment.

The febrile stage is succeeded by that of calm or ahyrexia in which many or all serious symptoms may seem to subside - and this may be the commencement of convalescence; but it is too often the prelude to the third stage that of collapse and death.

In yellow fever the pulse is accelerated, but according to general ^{rules}, not to that degree as in nearly all other diseases of a

febrile, or inflammation nature.

It is said to vary in different epidemics. In regard to strength, sometimes being full hard and bounding, at others small soft and easily compressed, and sometimes feeling as if the artery was filled with wax, so remarkably does it resist pressure. Great vascular soreness, also is often complained of.

The state of the tongue varies, it is usually covered with a white or yellowish white coat of epithelium until the latter stages; when it ^{may} be red and natural in size, at other times large, fleshy, with white bearing marks of the teeth against which it has pressed; erosion is rarely seen; in the last stage



the tongue may present the dry
and brown ~~color~~ of the rancor of pitch.

Anorexia generally characterizes
the disease till convalescence
commences. Rush mentions the
fondness for tobacco some showed
that came under his observation.

The thirst is usually not very
great, yet it has been observed often
many in some epidemics. Diuresis
and vomiting will almost surely
command our attention in a
well marked case of yellow
fever; gastric disturbance being
one of the early signs of toxæa;
at first the matters vomited
are the contents of the stomach,
then mucus and bile; and
according to Blair the ejecta thus
far are of alkaline reaction.

Breath may continue from
first to last, but usually when

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the stomach has been well
emptied, it becomes quiet and
liminous so, till from the second
to the fifth day, when without
apparent exciting cause it
becomes irritabile, and a
palecent red fluid is ejec-
ted; this has been called (White
bomit) and Blair states as his
belief that this is consistent
with the clearing off of the
tongue. Exceptionally bile is
ejected at this stage, and in
such a case may be regarded
as a good prognostic element.

When the emesis continues
any length of time of this
character, the ejecta is apt
to contain small snuff like
specks, forming a sandy sediment,
when this is seen black vomit
may be confidently looked for

The ejecta is not always black but may vary from the color of strong coffee, to a dark green. Blood corpuscles though undoubtedly present in black vomit, do not present a normal condition; the abundance of the ejecta varies greatly, yet the eructable stomach in this stage regurgitates even the most bland fluids.

When an abnormal state of the bowels exists, costiveness has been the rule and diarrhoea the exception. Dr Blair says in his account of the saline dejections "ordinarily the stools first observed were those produced by calomel and castor oil early prescribed; these were bilious, and not worthy of particular description, occasionally in the early stages a greater or

her second type of dark matter ~~matter~~
discovered in the excavations, this
is the first tangible morbid product
of the disease and highly diagnostic
of the first stage, the appearances
are similar to those produced by the
use of preparations of Iron; or they
may be bluish brown, or green
and glutinous; after the issue-
ment of these melanotic stools,
the discharges become of a dirty
green color, and on staining,
deposit a sediment revealing with
the aid of the microscope ex-
-tacts of uric acid, and the
traces of phosphates, probably belong-
-ing to the urine; as death
approaches the discharges become
brown-black or blackish
and in all cases of fatal termina-
-tion, suppression ~~is~~ of the urine
is a usual accompaniment.

Get up and touch the abdomen
It presents nothing abnormal except
- in the well known discoloration
of the skin, that however is not
always present, as a rule it appears
in the latter half of the attack;
but it may appear among the
earlier phenomena, it is usually
first observed in the conjunctiva
and about the chin extending
subsequently to the chest, where
the color is usually deeper than
elsewhere.

Epigastric pain, oppression
and tenderness, are frequent sym-
- toms, even when no complaint has
been made - especially during the
stage of prostration - very slight
pressure on the epigastrium will
cause pain distress and vomiting.

Flatulence often to an extreme
degree has been observed to

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constitute a very distressing symptom, and where we have cases of unfavorable epidemic constitution, hemorrhage is an important phenomena, occurring either from any mucous surface, or from any wound or fracture of the skin.

Colonel Surgeon Collins of the British Army, has given to the medical world his investigations of the urine in yellow fever. Much valuable information has been ascertained, with regard to the kidneys and their secretions, in connection with this disease; we now know that.

anaemia constitutes one of the most important elements in yellow fever. Blair states that after observing eighteen hundred cases of yellow fever, a number

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affixed in the urine of every fatal case of normal duration.

In the early stages of much apprehension is felt by the patient, as to the nature and issue of the disease, as soon however as the first stage is passed, the most indifference to life is manifest.

The expression has been much dwelt upon by authors, and while acknowledging its peculiarities, I can think but little of its importance, as it may be observed to differ with the stage or special nature of the case; cramps are not usually met with, spasmodic contraction of the diaphragm causing hiccough is by no means rare, and belongs to the catalogue of bad symptoms.

Few diseases progress so rapidly and are of such short duration cases having terminated fatally in forty-eight hours, and the great majority not being protracted more than a week, or - able cases of a mild character convalescence has been established as early as the third day; in this particular epidemics vary greatly, some being characterized by a speedy return to health, while some run on the lingering type, the symptoms usually subsiding about the fourth day, leaving the patient stripted of all his strength, so that he is not able to sit up or take exercise, till about the eighth or tenth day, when recovery may be expected without sequelæ of serious disease.

The period of incubation of yellow fever may be said to have for its usual time about a week although it may extend to twice that time.

As to the mortality of Yellow Fever, the usual law of grave epidemics is to be observed, the largest proportion of mortality occurring early in the visitation, and while some epidemics are noted for the comparative rarity of its fatal cases, others are rendered more justly terrible by its sweeping devastation, as in Mobile, during the summer of 1819, out of a population of a thousand souls one half of whom were reclaimed four hundred and thirty died (being after what has already been said it would be no less for

me to adduce further to the diagnosis
of yellow fever in general, nor
will the matter of differential
diagnosis claim our further care
but let us look at the pathological
anatomy of this dread disease.

The pathological anatomy
of the liver much has been
well known, while much
still remains for future research.

In the blood in the first
stage nothing abnormal ~~was~~
was found except an occasional
mixture ^{with} bile, the alkaline
reaction was always observed.
Only in the last stages and
post mortems were changes obser-
ved; and yet ⁱⁿ some fatal cases
there has been no abnormal
change except the bilious tinge,
and on the other hand some
observations have shown a marked

change to have taken place in the circulation during the last stages.

The brain shows no special pathological condition; the stomach sometimes natural has frequently its mucous membrane thickened and softened with patches of ecchymosis. Ulceration is rare. The liver in fatal cases as a rule is in a state of fatty degeneration; in the gall bladder cases are exceptional in which normal bile is found.

The heart as as a rule soft flabby and its structure easily broken up.

Treatment. The treatment of yellow fever has varied much according to the theory of the practitioners and the peculiar nature of epidemics, many prac-

titutions encountering, mild types
of the fever the normal tendency
of which without gross mismanage-
ment is to recovery, have system-
atically medicated their patients
in some peculiar way, attributing
to drugs what was simply a
part of the natural history of
the disease; and the course they
pursued has been heralded to
the world as the true and only
one to be relied on, let me ask

Is there a possibility of carrying
an abortive treatment? Can yellow
fever be cut short? In the present
condition of our knowledge, this
question I think must be ans-
wered in the negative.

It is strictly a self-limited
disease, to be managed - as be-
led, but not to be driven toward
a favorable issue, at the

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present day no wise man would place reliance on calomel, on the lancet, on cinchona, &c as specific remedies.

Among the first necessities in yellow fever, are to be reckoned cleanliness, good ventilation, quiet and good nursing, in bad cases where practicable there should be two nurses, one for the night the other for the day.

If the bowels are torpid they should be effectually moved as soon as the patient comes under treatment, this may be accomplished by the administration of 10 or 15 grs of calomel followed by castor oil or a saline draught no other purgation will be used unless to meet particular indication, Dr Stone of New Orleans recommends if the patient is seen early, &

follow the above with 15 or 20 grs
of Quinine, to be followed by 10
grains more in 12 hours, Beyond
this he does not go, his theory is
that the medicine thus given promotes
and strengthens diafforesis, and
that whilst this continues the
patient is safe. During the
febrile stage, cool affusion or
showering, is very refreshing to
the patient. The violent neuralgic
pains may be allayed by
the application of cold foment
&c. Thirst may be assuaged by
the prudent use of moderately
strong, barley water &c. Bread
and cheese should be taken in moderate
quantities of mind and body,
bare should also be taken that
the patient do not overburden the
body or limbs, till any undue
weight of clothing that tends

to offend or irritate! Then should be removed, pellets of ice are agreeable to the patient and may be allowed without danger, if no inflammation is demanded half tea-spoon or similar may be given.

Should collapse occur or threaten it is to be met with active stimulant brands &c. One of the most distressing symptoms are nausea and vomiting this should be corrected if possible by giving perfect rest to the stomach and the administration of some of the many remedies that are known to be useful. Many experiments have been made as to the proper treatment in black vomit, in this event let the stomach alone so far as the intestines are concerned, the exceptional cases of recovery after this symptom appears, are due to non-medicinal influences.

J. J. Johnson



Dissertation.

by

Thomas Morton Gills.

Subject.

Hypodermic Treatment of
Disease.



The last fifty years have witnessed greater discoveries, and more improvements in the Science of Medicine; than many preceding centuries. The Profession, roused to greater activity, by the spur given to all branches of science, by the application of Steam to Machinery; and the discovery of electro-magnetism, and its subsequent application to the Telegraph, by Professor Morse, have made corresponding discoveries in Chemistry, Botany, and Materia Medica.

The amazing strides taken in Anatomy, have been followed by a corresponding improvement in Physiology and Surgery.

The great improvement in the mode of erection, and management of our places of confinement for criminals, in our hospitals and asylums, together with the improvement in sanitary conditions of towns, is realised when we find that the average length of human life has been rapidly increased.

The discovery of Dr. Jenner, by which Small Pox, one of the most fearful and loathsome of all diseases, has been, or may be, expelled from the world; and that of Anaesthetics, by Dr. Horace Wells, mark the cause of the greatest revolution which the science of medicine ever underwent.

Fifty years have witnessed an entire reformation in the treatment of the Insane; and satisfactorily proved, that the Imbecile may, under proper

physical, moral, and mental training, become thoroughly reformed.

Among all the improvements that have been made, in the treatment of disease, and in the modes of administering remedies, none have been more striking, and perhaps none promise so much as The Hypodrastic Treatment, or the hypodrastic mode of administering remedies.

This mode was first employed in the treatment of Kraevus, and Aneurism; of the success that has attended the treatment of these two diseases, by the local introduction of the perchlorate of iron and other styptics, I do not propose here to speak.

It was as late as 1843, that Dr. Alexander Wood of Edinburgh, first proposed and employed this mode

in the treatment of neuralgia.

He had read with great interest a work, by M. Vallerie, on the pathology of neuralgia, published in 1841.

Dr. Woods says, "that gentleman pointed out the fact" "that the superficial nerves are the ones most commonly affected; and not only so, but that there are certain points in the course of such nerve, which are more liable to be affected by pain, than the rest of the nerve; and that these points are precisely those where the nerve approaches the surface of the body."

There are "four points" "where neuralgic pain is most apt to occur"; the first of these is the point where the nerve emerges from the bony canal through which it passes; the second, the point where the nerve traverses the muscle, to ramify the integument; the third, the point where

the terminal branches of a nerve expands in the integument; and the fourth, where nervous trunks become superficial during their course"; "this information" enables us to find the place, often very limited", where tenderness on pressure indicates the propriety of local applications.

"Another great fact" is, that while the pain is generally intermittent, the attacks may be paroxysmal, and may be awakened at any moment by firm pressure on the point indicated.

These facts, together with the results of the application of Morphine to denuded blistered surfaces immediately in the neighbourhood of the seat of pain, led him to infer that the injection of a solution of morphine into the part affected would give relief; and experience has fully

verified the expectation.

"It was in the end of November 1848, that the first chance to test the practicability of this theory presented itself; the patient an old lady upwards of 80 years of age, who had been kept from sleep for four or five days by a most violent attack of cervico-brachial neuralgia; (he goes on to say) "this lady was an old patient of mine, and I knew she could not bear opium administered in any form by the mouth, thirty drops of a 'solution' of morphine in sherry wine", were thrown "into the tender part within the angle formed by the clavicle and acromian; In about five minutes the patient's eyes became injected, and looked just like the eyes of a drunken person, and she complained that her head was in a confused state. She soon afterwards fell asleep," and awoke after a refresh-

ing sleep of ten hours.

This treatment quite cured the old lady of the neuralgic pains, which never returned.

In Edinburgh the use of the hypodermic syringe became almost universal and has proved eminently successful.

I take the two following cases from an article by Dr. A. Woods on the treatment of neuralgia, by the hypodermic use of narcotics. A lively, troubled with neuralgic pains, had been punctured upwards of one hundred times, always in different places; but no sooner had the pain been driven from one spot, than it took up its seat in another. At last I had expelled it from every part of the body except a corner of the head, and there I was puzzled how to deal with it. The fact was

I could detect no painful point in
the scalp. I would impress upon
you that the instrument is not to
be put into the place where the pa-
tient complains of pain, but into
the part where you can awaken
pain by pressure. Well I could
find no pain by pressure upon
any part. The lady's husband, a
medical man, took her to the
German baths, in hopes that they might
furnish what was wanting to a cure.

She resided there several months,
but without the slightest benefit; and
at length her husband brought her
back to me, saying that he was
satisfied that unless I could cure
her, nobody else could. I twice re-
examined that part of her head; once
more the second time, I succeed-
ed in finding out the point where
the needle should be inserted:

introduced the instrument; and from that day, she never had a touch of neuralgia again, though she has suffered from rheumatic gout."

Another lady, also the wife of a medical man, (I take these cases, because on that account I am better able to get at the symptoms) was suffering from very intense neuralgia in the forehead, which had lasted at irregular intervals, for ten days.

The pain was so severe that it rendered her completely useless. I at once inserted the needle; the pain became instantly relieved, and soon left entirely. Since that it has never returned!"

Dr. Charles Hunter, house Surgeon to St. George's Hospital, gives the following case. C.P., aged 18, was admitted to St. George's Hospital July 25th, under Mr. Tatton, suffering

from excessive neuralgia in the right eye, which was also extensively diseased. As there were no hopes of saving the eye, and the pain was constant, the globe was removed for fear that the other eye should also suffer: unfortunately it did, and ran a most rapid course - the lids became swollen, hard, thick, and ~~inflamed~~; the neuralgia in this eye became even worse than it had been in the other. All kinds of remedies were tried - acenite, morphine, hyoscyamus, opium, quinine, &c., all failed to give relief; chloroform was then used and frequently, but only gave her ease and sleep for a few minutes, or at most for an hour or so.

Sept. 9th. $\frac{3}{4}$ gr. of morphia, (the acetate,) was injected under chloroform into the eyelid, but produced no sleep, as sickness (which had commenced in the afternoon



after a dose of morphine by the stomach) continued during the night.

10th. No morphine given by the stomach, $\frac{1}{3}$ gms. injected under chloriform into the eyelid; she went off to sleep for seven hours continuously, which she had not done for some months. She slept once or twice the next day without chloriform.

11th. Injection repeated 10 P.M.; a part escaped; she slept four hours; had acute paroxysms, between the periods of sleep.

12th. Sleep produced by the injection, and the severity of the paroxysms much diminished. In the next few days the morphin was injected, and gave ease and sleep in proportion to the amount injected; from this time no chloriform was employed while inserting the point of the syringe in the skin.

16th. Slept four hours last night. The pain

now is nothing to be compared to what it previously was, tho swelling is going from the eye. In the evening of nearly three grains of morphia were injected, sleep was immediately produced and continued eight hours.

The next day she was far quieter and easier, and appeared so comfortable at night that no morphine was injected. 18th. No morphia having been injected, no sleep was obtained last night, although a six hour dose ($\frac{4}{5}$ T) was continued to be administered by the stomach. 19th. $\frac{1}{3}$ gr., injected into the eyebrow, gave sleep for several hours at night, and a little in the day; at night two grains were given by the stomach; it gave no sleep, but after an hour or so it caused considerable sickness.

Oct. 4th. The morphin injections are still continued, and with considerable relief to the patient.

Dr. W. M. G. Burns gives the following case (I use his own words) The patient Mrs — Marriet, aged about 38 years, had been suffering for years with severe attacks from neuralgia.

I was called to see her in the month of June 1858. I found her suffering from her old complaint in an aggravated form, above the right eye, extending over the temporal region of the same side. I had exhausted all the ordinary remedies employed in such cases, when I observed in your Journal* a notice of cases successfully treated by Dr. A. Wood of Edinburgh. I had at once recourse to his method of treatment by subcutaneous injections.

The injection was composed of equal parts of the tinctures of opium and hyoscyamus. The result was all that could have been wished for. The patient enjoyed a refreshing night

* Medicæ Thinks and Guesses.

sleep after the operation. Till now she has been free from neuralgic pains.

From among a number of cases presented to the Conn. State-Medical Society by Dr. B.H. Cattin, April, 10 1862. I glean the following, G.H., aged 44. A strong healthy Irish furmer. I was called to visit him Nov. 20th, 1860. He was suffering from a severe cold, attended with some fever and a troublesome cough. In the course of four or five days he was so far recovered as not to require medical attendance.

I was called to him again Dec. 3rd., I found he still had considerable cough and in addition to this, a severe attack of Sciatica. I continued the cough medicine which he had been taking with the addition of Frinch-Alea and Dovers Powders - with opium. Dec. 5th., no better, gave with the

Tinct. Aconit., Tinct. Veratrum Divide.

7th day, no improvement, little or no sleep, increased the opium.

8th. No relief or rest from the large doses of opium. Towards evening I injected a grain of the acetate of morphine, under the skin, over the seat of the disease; in ten minutes he was entirely free from pain, and I think he was in fits, though it was so unexpected to him that he was unwilling to admit it. He slept well all night except that he awoke once and took some of his cough medicine. I saw him in the evening of the ninth, and though he remained free from pain, I was fearful he might not rest well. To secure this I injected another grain of morphine, after that he had no return of pain, and was soon well.

A case of peculiar interest, inasmuch as it repeats at once, the most severe case of neuralgia on record, and also the largest amount of morphine ever put under the skin in the treatment of any one case, was reported by Dr. H. B. Townsend of New Haven, and published in the American Medical Times, Dec. 27th. 1862.

It is given thus, "In the month of Aug. 1861, a patient presented himself under the following circumstances:

The patient was 5 feet 10 inches in height, weighed 200 lbs., muscular system in a perfectly normal condition. Alimentary canal performing its functions naturally and regularly.

Notwithstanding this plethoric and robust condition of body, he suffered from an intense pain in the region of the left shoulder, extending down the arm, and slating back

about four weeks to its commencement.

Since early childhood he had been in the enjoyment of perfect health, and even at the first visit, although I made a careful examination of his case "capricie", nothing of an abnormal nature could be detected aside from a natural depression, resulting from the severe pain and disturbed rest.

Neuralgia suggested itself, and a subsequent train of symptoms has without doubt substituted the diagnosis.

The excessive and almost continual pain, with its natural interference with sleep, had for the four weeks previous to his visit reduced his weight from 215 lbs. to 200 lbs. Having employed the Sulphate of morphine in several cases of neuralgia hypodermically with complete success, I had no hesitation in administering it immediately.

The one eighth of a grain thrown under

the skin produced no perceptible effect; but when increased from one half to one grain the pain immediately subsided, and the arm which was powerless before the introduction, was able to perform its proper functions wholly unimpaired during a period of 24 hours.

Upon a recurrence of the pain a re-introduction was necessitated, followed by the entire disappearance of the neuralgia. The appetite, which was slightly impaired, returned, and the ~~digestive~~ generally recuperated, and thus the case continued for about four months, the injections not exceeding five grains of morphine in twenty-four hours.

During this period of four months the sulphate of quinine in large doses, the salts of iron, arsenic, iodide, potass, strychnia, Atromentum, cannabis indica, ammonica mirabilis, etc. etc., were

employed, but without any perceptible benefit. In fact, the treatment included illustrations from all the different classes of remedial agents found in the *Materia Medica*.

Up to January, 1802, the neuralgia had been confined mostly to the left shoulder and arm, but at this time a marked change occurred.

The pain became more excessive, and extended down the side to the lower extremities, across the abdomen and chest, affecting not only the muscles of the chest, but those of the bronchial tubes, producing strongly marked paroxysms of asthma.

On account of the locality of the disease and its exaggeration, it was necessary to increase the dose to six grains daily, and at last after three convulsions, which lasted about half an hour each, during which time the functions of the sensorium were greatly

perverted, and almost entirely suspended, it was necessary to increase to eight grains in the twenty-four hours.

Persons to January, 1862, he has not been confined to the house even for a day, but during the attacks connected with the convulsions he was obliged to remain in bed for six weeks.

From the commencement of the disease and throughout its course, there has been no inflammatory action and no symptomatic fever.

In the neighbourhood of March 1st, 1862, the neuralgia left the limbs and located itself in the diaphragm and back, affecting the muscles of the bronchi but slightly.

The contractions of the diaphragm were so violent as to cause the abdomen to assume the dimensions of a female at the sixth month, which subsided

immediately after the injection of the morphine, leaving it soft, flat, and normal. The contractions have produced an umbilical hernia (although there was no predisposition,) which has attained the size of a hen's egg.

Up to the present July, 1862, we find him in the following condition, size, general health fair, weight 160 lbs., appetite good, pain comparatively slight, and when free from it, seemingly nearly as well as ever. The injections are continued once or twice daily, averaging ten grains in the twenty-four hours.

Near the middle of August, 1862, a permanent enlargement of the abdomen was noticed, which gradually increased until November, 1862, when, after failing with the diuretics, hydrogogue cathartics, and other agents generally employed, I drew off six-

ten quarts of serum of the usual characteristics found in ascitis.

This occasioned great relief, and mitigated all the distressing symptoms to such an extent, that he was able to walk out with the aid of an assistant.

His condition Nov. 20 1862, much emaciation, weight 140 lbs, return of ascitis, occasioning pain from pressure, appetite good, sleeps poorly, pulse weak, constipation, confined to bed, pain of neuralgia excessive, but suppressed by the morphine, of which he takes daily from twenty five to thirty five grains seldom less.

December 2nd, 1862, — I reperformed the operation of paracentesis abdominalis, and drew off about eighteen quarts of serum of the ordinary character.

This I was prompted to do in order



to palliate the extreme dysphnoea, although he was in a very depressed condition.

The breathing was relieved, but the pain, which was located in the back, continued. He gradually sank, became comatose, and death terminated his horrible sufferings on the fourth instant.

The greatest amount of morphine given in twenty-four hours, when the suffering was the most acute, was over fifty grains (the morphine being of the first quality.)

When any attempt (unknown to the patient) was made to reduce the dose, it failed to control the pain, and I have been obliged to gradually increase the strength until (as before stated) over fifty grains have been administered in the course of a day, and without producing any marked symptoms of narcotism.

The amount of morphine taken during the treatment, extending over sixteen months, is almost fabulous; five thousand grains will not exaggerate it.

It never failed to relieve the pain and spasm of the muscles; the latter being often so severe of the recti-abdominalis, as to assimilate the emprosthotonos of tetanus.

The muscular fibers between the linea transversa were so firmly contracted as to form distinct and hard tumors the size of a hen's egg. No effect was noticed as attributable to the morphine, with the exception of the immediate and total subsidence of the neuralgia. He had never taken any of the salts of morphia, or preparations of opium, before he was attacked by this malady, and his system gave no evidence of an habitual use of alcoholic

stimulants. The appetite continued good throughout the course of the disease, perhaps accountable to the fact that no morphine was taken into the stomach?

It was my privilege to see this case almost daily, for the first twelve months, during which time I kept a daily record of the amount of morphine injected: It is proper to say less than the Doctor's estimate, of the amount of morphine used during the sixteen months, is small:

I know, from my record, and his statement of the amount used daily during the last four months, that the actual quantity used exceed his estimate by 2000 grains; making an average of about ten grains daily.

Such has been said, by way of objection to this mode of administering remedies, about the local irrit-

tation caused by the injections. notwithstanding, but one abscess formed during the entire treatment of this case.

In neuralgia this plan of treatment is almost universally beneficial, ^{even} when it fails to cure it always gives relief. It is not however confined to the treatment of neuralgic affections. But is applicable in the treatment of all conditions, and diseases, where the indications of treatment are to relieve pain, quiet spasms, and to produce sleep.

The amount of sleep produced, and the cessation of pain, always depend upon the size of the dose, and the amount of pain and excitement present in such individual case.

The injections have been used with flattering success, in a large variety of diseases, and many cases

have been reported. But we have neither time or room for them here.

It is enough for our purpose to briefly speak of a few of the diseases that have been successfully treated by this plan.

In Delirium Tremens, the injections have been repeatedly used with entire success, giving immediate relief by inducing sleep, and allaying nervous excitement, when all other, and even the same remedies, given by the stomach in much larger doses have failed.

The different forms of Tetanus yield also to this powerful mode of treatment. Sleep follows the injection; although in the severer cases the tetanic spasms continue, though the patient may be unconscious of them. The result is the same in Chorea, except that in this disease the spasmodic action ceases as soon as

the patient comes fully under the effect of the narcotic.

In obstinate cases of wakefulness with restlessness it acts like a charm. While it affords an efficient means by which to quiet the most暴躁的 mania; repeated cases of pronounced cure by narcotic injections, have been reported; Now the cases that will yield to (I mean be cured by) this treatment are those that are not confirmed or hereditary, but depend upon some present exciting cause. Sleep is the first thing to be sought, it always proceeds recovery.

In Gout, and Rheumatism, they have been employed with good success, the Rheumatism frequently disappearing with the effect of the first injection.

The choice of cases

Valuable as is the hypodermic

use of narcotics, it is not a specific, and should be used in all cases with discretion. When to employ the injection, and when not to, must depend upon circumstances, such as the nature of the disease, the urgency of the case, and the object in view.

There are some cases when hypodermic injections should be used, almost as a rule, without the loss of time in the employment of other means. I mean those cases of high cerebral excitement, as of delirium tremens, and of mania. In these cases to produce sleep, and allay excitement are the objects of treatment; and should be gained as soon as possible. The stomach is often irritable, or in such a state that it will not absorb medicine: and often, the patient cannot, or

cannot be induced to swallow.

In reality every thing points to the need of some surer, quicker, and more active mode of treatment than exhibition by the stomach.

It may be used also as a primary measure in cases of sudden and violent pain; for instance the passage of a renal calculus: the pain in these cases is at times almost insupportable; while the irritability of the stomach, and the consequent sickness, demand that the narcotic should be placed beneath the skin if used at all.

There are also cases where it should not always be used as a primary measure, such as Tic-Douloureux, Sciatica, and in some Rheumatic cases. Many of them depend upon slight derangement of some part of the digestive function,

and frequently upon overfatigue.
Purgatives, Alteratives, and Tonics, and
in the latter case Rest, should be
first tried, if they fail, then resort to
the trial of this plan. In properly
selected cases the cure will be very
rapid.

In another set of cases, the injec-
tions should be used as a last
resort; I refer to that class of cases
where the causes of the disease are
obscure, and other modes of treatment
have failed. It is very often so that
in these very cases, injections seem
to answer the best, and are followed
by immediate recovery.

We should often use them, where
we know that they can act only as
palliatives; in cases where the cause
of the disease cannot be removed,
as it is not advisable to remove it;
as in neuralgia caused by pressure

on a nerve, and also in cases where recovery is not expected to take place, as in some cases of Tetanus and Hydrophobia.

As a means of Diagnosis hypodermic injections promise to be a material aid. They may be made to assist us in diagnosing between, neuralgia located in the intercostal spaces and pleuritis, neuralgia in the abdominal paroxysms over the liver, and hepatitis, especially where there is no enlargement of that organ; neuralgia in females in the lower part of the abdominal paroxysms, and uterine disease. Two or three injections usually cure the neuralgia, while in the other cases it would only relieve the pain for a short time. But it must be depended upon only in connection with attending symptoms.

When the Pathology of Tetanus and Chorea shall be better understood will it not distinguish between, spasms which depend on lesion of the cerebrum, and those that arise from lesion of the spinal cord?

Choice of Narcotics, should depend upon the disease, the peculiarities of the patient, and the object of treatment. Any of the narcotics may be used, but among those whose opinions we are bound to respect, there is a great diversity of sentiment in regard to the narcotic that may be used with the greatest benefit.

I should prefer some preparation of either the Opium, the Belladonna, or the Hyoscyamus.

It is however among the -differences preparations that the greatest choice exists.

The tinctures may be used with

good effect, but they have the objection, that they cause a small hard lump, which disappears after a time. Their strength is apt to vary. While solutions are rapidly absorbed, produce no irritation, if properly made, and their strength is not apt to vary by evaporation.

A solution of the acetate of morphine has, perhaps, been as highly recommended, and as much used as any preparation: but for my own part I prefer a solution of either the sulphate of morphine, or the sulphate of Atropine. I think that they are more powerful, act more ~~savently~~ and surely, and produce less irritation than the acetatis.

The size of the dose is varied, by the idiosyncrasies of the patient, the age, the sex, the amount of pain and nervous excitement present, and the effect

sought for. As a rule the first injection should be, for the female one half the ordinary stomachic dose, for the male two thirds of the same dose.

Having ascertained the amount that the patient will bear you may increase the dose at pleasure.

Injections when received beneath the skin produce both a local and a general effect, the rapidity of its action depending upon its quick absorption into the circulation.

From the foregoing, and some little experience in the use of hypodermic injections, I draw the following,-

I "That certain medicines may be introduced into the cellular tissue beneath the skin with safety and with advantage."

II "That medicines so introduced have a general as well as local effect."

III "That medicines used hypodermi-

cally act more powerfully than when
administered by the stomach.

IV That medicines when introduced
in this way act rapidly.

V That medicines so introduced act
with greater certainty than do stomach-
ic doses.

VI That much less constitutional
(nervous) irritation attends the sub-
cutaneous introduction of medicines
than when given by the stomach,
while they are on the whole far less
likely to disturb and derange the
functions of that organ.

VII Medicines are more purely
received into the system by this
method than when given by the
stomach, in which organ they may
become contaminated or decom-
posed.

VIII That when placed in the cellular
tissue beneath the skin the slack

amount taken into the circulation
is known, and the whole of it takes
effect, which may or may not be the
case when taken by the stomach.

X That a given amount of medicine
employed hypodermically has a
greater, more rapid, and a more
certain, effect, than when employed
epidermically.

XI That the medicines for which this
mode of introduction is especially ap-
plicable are the various narcotics and
sedatives.

XII That the diseases for which this plan
of treatment is especially indicated
^{are, in the} most part affections of the ner-
vous system: — they are to be used—
1stly, Where the immediate and de-
cided effect of a narcotic is required.
2ndly, Where narcotics administered
by the usual methods fail to do good
and yet are indicated.

IV. Where the effect of a narcotic is required, and the patient refuses to swallow.

V. Where from irritability of the stomach or other causes (such as idiosyncrasy, &c.,) the patient cannot take the medicine by the stomach."

XII That the localization of the remedy is not necessary as at first supposed, in fact the non-localizing plan has the advantage that no abscesses result, while they occasionally follow the repeated local injections.

XIII That in using the hypodermic sponge the blood vessels and the trunks of nerves should never be wounded by the point of the instrument.

It was my original intention to have spoken also of the hypodermic use of other than narcotic remedies. I need not

57.

tell you why I do not. I can only
say the half hath not been told.



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